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ABSTRACT

This annual journal issue contains 21 papers, many of which were developed as background pieces for sessions of the annual conferences of the Professional and Organizational Development Network in Higher Education (POD). Papers are grouped into four sections on: personal reflections, faculty development, evaluation of teaching practices, and training and development. The following papers are included: (1) "Empowerment in Academic Cultures: Whose Responsibility Is It?" (Lance C. Buhl); (2) "Dreams and Actualities: Danforth Fellows in Mid-Career" (R. Eugene Rice); (3) "The Unaccepted Challenge: Faculty Development for Women" (Michele Fisher); (4) "The Scholar-Practitioner Dilemma" (Robert J. Menges); (5) "A Mathematician's Journey: From Applying the Pure to Purifying the Applied" (Ronald A. Smith); (6) "Tanning My Hide with Research" (Robert E. Young); (7) "On Doing Intellectual Work: Grasping the Power of the Gestalt" (Rita Weathersby); (8) "The Creativity of Being Marginal: A Style of Generating Research in Education" (John D. W. Andrews); (9) "The Path of Passionate Inquiry: A Comment on Smith, Young, Weathersby, and Andrews" (Michael Piechowski); (10) "Undergraduate Reactions to Teaching Assistants" (Robert J. Menges and Jeremy Wilson); (11) "A Comprehensive Evaluation of a College Course" (Richard R. Sudweeks and Robert M. Diamond); (12) "Effect of a Teaching Consultation Process upon Personal Development in Faculty" (Mary Deane Sorcinelli); (13) "Knowing, Understanding, and Other Forms of Learning" (Bette LaSere Erickson and Glenn R. Erickson); (14) "The Design of Intellectual Experience" (Donald L. Finkel and G. Stephen Monk); (15) "The Dreaded Discussion--Ten Ways to Start" (Peter Fredrick); (16) "Teaching with Charisma" (James D. Milojkovic); (17) "The 'First Day' Workshop" (Peter Fredrick); (18) "A Second Look at Faculty Development and the Second Sex" (Michele Fisher and Winifred E. Anderson); (19) "Overview of Trigger Film Strategies" (Linc. Fisch); (20) "The Classroom Information Manual: A Guide to the Teaching Environment" (Marina Estabrook); and (21) "Instructional Improvement Through Individual Consultation" (Deborah E. Simpson et al.). Most papers contain references. (DB)

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TO IMPROVE THE ACADEMY

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Resources for Faculty, Instructional, & Organizational Development

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A Publication of the Professional & Organizational Development Network in Higher Education
Volume 1

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To Improve the Academy

Resources for Faculty, Instructional, and Organizational Development

P.O.D. Resources—1982

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Foreword

The Professional and Organizational Development Network in Higher Education was formed in 1976 by people who felt that they needed a network to support each other in efforts to make learning, teaching and institutional life more effective and fulfilling. Since that time we have gathered annually in a national conference to maintain the network and learn from each other about faculty, instructional and institutional development. POD has organized regional training workshops and established liaison with organizations such as the American Association for Higher Education.

We also shared writing about our work for several years through the *POD Quarterly*. *"To Improve the Academy: POD Resources-1982"*, the first in what is hoped to be an annual series, is our current attempt to share the written perspectives, reflections and strategies of our members.

Many of the pieces included herein first appeared as background pieces for the active sessions at the annual POD conferences. The materials in the fourth section also represent the kind of handouts and suggestions that we regularly pass on to each other on a limited basis to improve our programming, planning, workshops and consultation. You are encouraged to copy and use these pages, adapting them as appropriate (many are several generations removed from earlier ideas about training and consulting). Only be sure to give credit to the author(s) and keep up the process by letting the originator know of your experiences.

We thank the authors of the pieces collected in this volume. They met almost impossible deadlines and suffered a rush to publication with a less-than-perfect copy. We insisted that they share their work in progress and they graciously complied. Such cooperation is typical of POD folks.

If you are not already a member of POD, we invite you to join us. This small network is the best way to keep in touch with others who believe that work and learning will be enhances when we collaborate to support each other. For information about membership and the annual conference (near Montreal, October 14-17, 1983 and Washington D.C., October, 1984) you may contact the Executive Director, Michael Davis, Office of Academic Affairs, University of the Pacific, Stockton, California 95211. Members who wish to submit items for a subsequent edition of this resource book should contact one of us. We look forward to your offerings and responses.

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Section I

People and Priorities: Reflections on Our Work

Learning takes place at several levels—in the individual, in groups, in organizations and in the larger society. It is amazing how much of our efforts in the past have focused exclusively on individual learning. It may be that we are learning slowly as a society, and our institutions seldom seem to develop much beyond their initial geniuses. But as a group, those of us engaged in faculty, staff and organizational development in higher education have aimed at being more reflective and intentional about our learning.

The articles in this first section reflect our group's mid-life questioning. As one of the participants in the Danforth study has remarked about his own growth, some may now be "more tough-minded, more skeptical of easy answers to complex questions, more willing to admit (our) own creaturehood within the forced matrix of history and culture."

The three pieces we have selected for this section address complex questions and offer no easy answers. When Lance Buhl presented an earlier version of his paper in Cincinnati at the 1981 POD conference, "Living and Learning in Academic Cultures," some felt he was too skeptical. We don't think so. His assertion that development must be the central paradigm of education flies in the face of established practice , and in most quarters we have made little headway. As if in support of this claim, the Danforth fellows studied in the second article by Gene Rice give little evidence of growing empowerment as they

reflect on their own undergraduate dreams and the actualities of mid-life in the academy. Finally, Michele Fisher calls on us to give special attention to women faculty, who have learned well about powerlessness.

These three challenges demand more searching of our developmental assumptions, philosophy, theory and methods. Our evolution as a group of practitioners will be marked by our growing ability to empower others.

Empowerment in Academic Cultures: Whose Responsibility is It?

Lance C. Buhl

I. Introduction

This is an essay—cast first as an address—on visions and values, cultures and communities, power and paradigm. It is about leadership, really. And our responsibility as academic leaders who are called "developers" to create and maintain empowering institutions of higher education. The alternative title for the essay is EMPOWERMENT IN ACADEMIC CULTURES: IF WE WON'T, WHO WILL? That probably more accurately reflects my concerns.

Harold Bridger of Tavistock Institute in London established the theme around which I will explore these issues in 1978 at the First European Forum on Organization Development (Aachen). In the address with the tidy little title, "The Kind of 'Organizational Development' Required for Working at the Level of the Whole Organizational Considered as an Open System," Bridger aptly describes one facet of our reality in colleges and universities:

> One of the most critical needs in organizational life has become that of ensuring that when a pilot or innovative group has developed a form of work life eminently relevant to its function and purpose, it should not be allowed to wither away or become isolated in its wider organizational environment praise its worth but prevent diffusion of its values and processes on rational grounds combined with unrecognized destructive thinking.

How many professional development programs have passed by the boards in the last ten years! Indeed, a good part of what we face is how to nurture those programs set up to nurture healthy teaching/learning interactions, which in themselves are the very model of mutual empowerment. In considering why we must struggle so hard, not to begin programs but to maintain their existence (much less their vitality), I think we need to look beyond economic woes. Money is always scarce. The truth of our difficulty lies in cultural beliefs, fairly general across higher education, that are inimical to any dynamic conception of development itself. The fact is that most academics either do not believe that people—students, colleagues, others—really "develop" or they do not act consistently with such a belief if they hold it.

Now this sounds like harsh judgement. I suppose it is. Much of what follows here will also sound severely judgmental. Because of that, I need to affirm that I am in fact an optimist about human beings. I believe that most people most of the time want to do well and usually fulfill that wish. I'm not quite up to Will Rogers' standard, but I can say that with very few exceptions I haven't met an academic whom I did not or could not like. More, I believe that most academics most of the time want to do well in the classroom, would like to promote (or at least be associated with) learning in most students, and are sincerely committed to the advancement of knowledge and a just society. And, finally, I believe that next to teaching students promoting professional development- -in teaching, in service, in scholarship and creativity, in administration and leadership—is potentially one of the most empowering kinds of work there is to be done in this society. I am aware, too, that my judgements run the risk of discouraging men and women who are new to professional development efforts. I hope that my words serve more to forearm then to forebear. Frankly, in this case I do not know how to reconcile my commitment to positive reinforcement of important work (as a principal of practice) with my perhaps stronger commitment in this case to intellectual honesty. The alternative to speaking up is to bite my tongue. I guess I don't have a strong commitment to self-mutilation.

Enough of apology!

II. The Theme Encapsulated

Good form suggests that I tell you what I will say, say it (next section), and tell you what I have said. If I had one sentence to telegraph and summarize all that I have to say, it would be: the reason professional development in teaching is a) so difficult to maintain and b) results in so little is that developers on the one hand and most academics (whatever the institutional context, on the other use the same words to describe very different concepts of education. This message has several parts, three to be exact:

1. In assessing what we "developers" have done and need to do, we should think in terms of the larger culture of higher education. That is, we should examine the assumptions and rules, norms, and roles academics maintain. We should be concerned with the purposes of that culture. From the cultural perspective, "developers" are probably failing. We have not had much impact on ruling attitudes and behaviors, certainly not enough on a broad enough basis to contribute to creating or maintaining a developmental or an empowering culture—what F. Lee Knefelkamp, following Erik Erikson, calls "generativity" or "the capacity and the ability to care for that which we have created: children, knowledge, students, faculty, staff, entire institutions." It would be comforting to think otherwise, but I am compelled to agree with Knefelkamp in her fear that colleges and universities are "in danger of becoming a higher education community characterized by non-generativity and by inability to hear each others' voices." Professional development, for all of its latest reincarnation since the late 1960's, has done little to reverse, even to stem, this outbound tide.

2. It is my personal judgement, and the clear implication of Knefelkamp's observation about non-generativity, that the cultures of most colleges and universities—indeed, the general culture of higher education in this country—are inherently disempowering. In fundamental ways they contribute to perpetuating social and intellectual limitations — on students, on faculty, on staff, on administrators. Rather than fulfilling the liberating promises we all say higher education should achieve, common educational practice and belief undermines human development. The root of our failure to have an impact on that common educational practice and belief structure lies in

misperceiving the terms of the prevailing—the disempowering—cultural paradigm. In fact, we fail to understand that it is a different paradigm than the one which developmental notions about education describe. In our misunderstanding and misperceiving, we may be colluding in perpetuating the opposing paradigm and the culture it serves.

3. Our challenge as developers is to accept the possibilities of leadership. We must become powerful in a very special sense. And we must begin by acknowledging that we hold a very different cultural paradigm than the prevailing one. We need to spell that alternative vision out, use our special knowledge and technologies to train faculty and administrators in it, and make more effective use of our networks—POD in particular—in order to become effective academic leaders.

III. Taking the Cultural Perspective

Why take a cultural perspective at all? Don't we have enough to worry about just to keep our shops going without getting het up about whole cultures?

The answer to these questions starts with an acknowledgment that the very reason the contemporary wave of professional development in higher education got underway was that something was missing in the academic culture. More to the point is the fact that the current academic culture forms the topic of this year's POD conference—that is not accidental. For all the fatuousness in the notion that the 1970s formed the Me Decade, an Age of Narcissism in Christopher Lash's words, there is in fact something to the idea that culture and community suffered a setback in the early 70s and are once again forcing their ways back into the center of our attention. The decision by the Planning Committee to organize this year's conference around those notions reflects appropriately enough, stirrings in the larger American culture.

Arnold Brown, in his article called "The Age of Osiris: Tumult and Transformation" used the Egyptian deity Osiris as a metaphor for what the 1970s have meant. Osiris in ritual was torn to pieces and reborn annually as a way of explaining the cycles of life on the Nile

to the ancient Egyptians. Brown argues that we, too, may have been in the midst of a "pre-transformation" over the past decade. In reaction to the failure of traditional institutions and the still uncertain shape of new ones, Americans quite naturally spurned the conventional and, somewhat schizophrenically, resorted to their own individual resources. Osiris reborn—of a general renaissance of respect for broader social contexts and responsibilities.

Daniel Yankelovich, the prominent pollster and cultural critic, also gives testimony to a similar pattern. He argues that the 1950s was ruled by the ethic of self denial and the 1960s and 70s by the ethic of self-fulfillment. If all the signs registered in peoples' responses to pollsters' questions are to be believed, the 80s will shape up to be an age of the ethic of commitment. Community will play a large role.

People—academics—will find meaning in the cultures in which they live, work, and will exit this existence.

The preeminent roles of the cultural contexts and their relevant ethics forms the central message of the most sensible of management studies of Japanese business. These studies suggest that the rash of the greatest and most successful Japanese firms—indeed, the most enduringly successful American firms—got that way because of the coherence and strength of their internal or organization's philosophy, ethic and modes of socialization.

The striking thing about these philosophies is their simplicity and moral moorings. Richard Pascale and Anthony Athos, in their very important study of *The Art of Japanese Management*, conclude that "the best firms link their purposes and ways of realizing them to human values as well as to economic measures like profit and efficiency." (Pascale and Athos, p.44). For example, IBM seriously stresses the continuing relevance of founder Thomas Watson's code of corporate philosophy:

1) Respect for the individual. Respect for the dignity and the rights of each person in the organization.
2) Customer service. To give the best customer service of any organization in the world.
3) Excellence. The conviction that an organization should pursue all tasks with the objective of accomplishing them in a superior way.

From these, Pascale and Athos observe, follow a set of principles for management that include enlarging the capabilities of IBM people through job development and the opportunity to find satisfaction in their tasks.

There is in these observations and the IBM example a message for higher education. Compare the IBM philosophy and attendant set of management principles to the long tortuous, self-righteous, and basically all but ignored mission statements, catalogue philosophies, and other PR texts of most colleges and universities. Oh, for some sincere, simple, behaviorally meaningful simplicity! I think of the very positive and altogether rare example of a retiring college president who, at a recent summer convocation for all staff members, asked two students to come up to the podium to stand with him for a moment. He pointed to the two and said to the staff, "These are two of our students. Please do not fold, spindle or mutilate." Corny? Maybe. It was nevertheless wonderfully refreshing to me to hear that simple metaphorical affirmation of the centrality of students to the mission of higher education. It's one that bears repeating titurally and often.

All the reemphasis on organizational cultures and ethics is an intriguing vindication of what the seminal thinkers about human behavior in complex organizations—Argyris, Likert, McGregor, McClelland—have urged all along. Rensis Likert, for instance, maintains that the mechanisms which organizations and societies rely on for dealing with conflict are true indicators of the level of their cultural sophistication and maturity. Those which legitimize conflict, value it, seek productive and humane ways of resolving it, and work to maintain the dignity and participation of all stakeholders in the aftermath of decisions are healthful organizations. They promote creativity and growth. It should be sobering that academic institutions as a class do not have very sophisticated mechanisms for handling conflict in Likert's studied opinion.

Not only should we attend to the institutional cultures in which we mange "developmental" efforts, but we should look to the broader, societal cultural context as well. As self-styled developers, how can we fail to be concerned about the health of democratic institutions and of the civil libertarian tradition? Our ideas about learning, growth, human cycles of development, and the free inquiry out of which such

radical notions have grown have their roots and continue to depend for their sustenance on the cultural context of constitutional democracy. What colleges and universities do and produce profoundly affect the future of the body politic. Pure self-interest alone should tell us that we must have literate people capable of independent judgement and problem-solving, people, moreover, who value free inquiry and individual self-fulfillment. To be capable of exercising independent judgement and valuing, as a matter of practice, free inquiry, citizens need something more than simply to hear about the civil libertarian tradition. They need to be socialized in it. They need to have real experience of it in academic institutions.

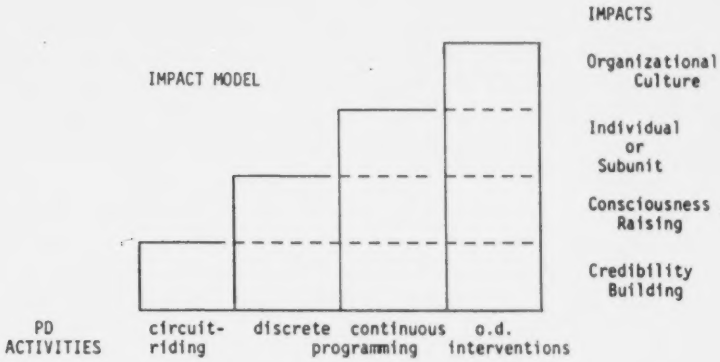
Considered in the broader cultural context, the true mission of professional; development translates into ensuring that the conditions for learning (the faculty's responsibility) and the conditions for teaching (the administration's responsibility) reflect and foster the civil libertarian tradition.

IV. Development and the Disempowering Paradigm

The fate of most collegiate professional development programs, both formal and informal, is a good illustration of the conundrum suggested by Harold Bridger. They tend to be short-lived and, in terms of the cultural patters of their institutions, inconsequential. There are numerous instances around the country of pioneering faculty development programs falling under the budget axe. No one even suggests that they have been eliminated because their work is done. On the contrary, they were just beginning to have an impact of any consequence. They died for lack of support. They were "marginal" to their academic cultures.

To some extent, we professional developers bear some of the responsibility. There is a disheartening tendency—I have seen it among us all across the nation—to have expectations for impact that are entirely unrealistic when judged against the kind of programming we undertake. We offer workshops and newsletters and imagine that faculty will change their teaching behaviors significantly. Or, we individualize our efforts through intensive consulting with a few

faculty and expect that teaching and learning across an entire departmental curriculum will improve measurably. Or, we work with an entire department and think that the whole college will become more responsive to student learning requirements. In short, we violate pretty basic functional relationships between programming and impact, as illustrated in Table I.



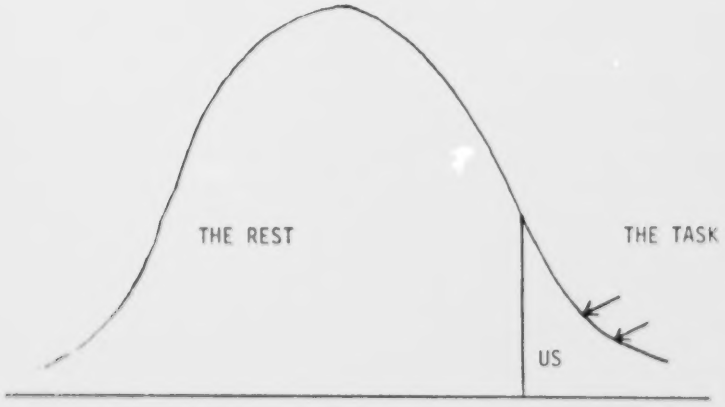
Although the data about the operation of professional programs is not extensive nor recently updated, what there is suggests that most programs operate principally in the discrete programming mode.

But the underlying cause of our failure to have impact lies not with us but in the cultures of most colleges and universities. To a certain extent, the literature on social change prepares us to expect a tough time in getting our message across. Men and women in complex organizations *resist* efforts which call for behavioral changes. But the resistance thesis is not adequate, in my judgement, to explain why development has had so little impact. I think we need to look at cultural assumptions, prevailing ethics. When we do this we begin to get a sense that the lack of receptivity is a function of a disempowering ethic which is so persuasive as to be paradigmatic.

The best and most convincing evidence about the extent and nature of the paradigm comes from the most cursory observation of

predominant classroom practices. I trust I need not review the studies on student experience of college or of teaching practices for members of POD. But if doubt about all of this exists, I suggest that the doubter undertake his or her own survey of conditions as they exist in most classrooms on the campus. Do not be surprised if the overwhelmingly prevalent pattern is of one-way communication, passive in-class learning behaviors among students, lack of clarity about learning objective grading procedures, and grading criteria, almost no individualization of teaching/learning interactions, and haphazard organization of testing procedures.

Whether the paradigm which this pattern or teaching behavior underscores is intentional or not, it is fundamentally subversive of human development, democracy, and the civil libertarian tradition. That is, most students' experience of most courses across the entire undergraduate educations is framed by a set of faculty assumptions and behaviors that is medieval in spirit: learning is a mystery, that any but the brightest learn at all is a miracle, and all determinations of what constitutes meaning are controlled by the authority of the priesthood of scholars. The paradigm is best represented by the shape of the Gausian or normal distribution curve, illustrated in Table II.



Think of the ubiquity of this model as a controlling metaphor for grading, in faculty commentary on students, in administrators' descriptions of faculty, in what passes for promotion and tenure evaluations and merit systems. A few are bright and excellent, most are adequate and average, and a few are dullards and hopeless. Once tagged, the student or the faculty member has one hell of a time demonstrating that he or she is anything else but. It is the Procrustean nature of the paradigm that is most antithetical to developmental values. I am reminded of Maurice R. Stein's commentary on the contribution of William James to American psychology and American culture. The "main point of James's approach to psychology," says Stein, "was the injunction that the tendency to categorize experience prematurely, and particularly, to categorize prematurely the meaning of other peoples' experience, is the greatest threat to full human existence." The prevailing disempowering paradigm in higher education does nothing if it does not categorize most students' experience, meaning, and capabilities prematurely. Indeed, the very violation of the Jamesian injunction lies in the inherently disempowering nature of the Gausian curve applied insistently, indiscriminately, and so without relationship to adequate data throughout higher education.

The paradigm confounds teaching for learning and thwarts efforts to change educational practice. The conception of teaching it allows in non-dynamic. Teaching is basically, therefore a gatekeeping function. It is unidimensional relative to teaching methodologies. It places no premium on honest evaluation; adequate to the self-justifying task of evaluation is the operation of a simple input-output model of measurement. So many books assigned, so many lectures given, so many quizzes and tests and papers specified equals a nearly normal distribution of grades. Evidence of learning (which "of course" is intangible anyway) is beside the point. The model is content-oriented almost exclusively. Process is faddish at best, a waste of time at worst. By definition, the model is extremely elitist. It is really any wonder that Patricia Cross notes that the gap between the "haves" and the "have nots" in higher education is increasing? By that token alone, the model subverts the development of anything like a real academic community; for, there is little interdependence among individuals possible and, worse, as Knefelkamp has pointed out, the model enter-

tains very little in the way of caring behaviors. And, finally, like the other model or paradigm I will share with you shortly, this one is perfectly self-fulfilling.

I for one am not surprised that so prestigious a member of higher education's establishment as Clark Kerr concludes that colleges and universities do not do much more than help most students from slipping into greater scientific, cultural, political, and social illiteracy than when they left high schools. If such is the case, it augurs ill for the future health of the democratic tradition. Higher education may form a good example of what in medicine is called the "iatrogenic problem"— a pathology or illness resulting from or caused by the physician. Since it is illusory to count on any priesthood to reform itself, the question I posed as the title of this essay seems apropos. Let me rephrase it. If we won't empower, who will?

I have concluded that we are not yet an empowering force. The root of our failure to be such is that we have not recognized the disempowering paradigm for what it is and how tightly it grips higher education. In a sense, we have colluded in sustaining the disempowering paradigm despite our belief in an alternative one. We have accepted as a true bill the priesthood's civil libertarian and developmental rhetoric. We have not applied fully Chris Argyris' critically important distinction between "espoused theories" and "theories in practice." In fact, faculties (most obviously liberal arts education, and law faculties) deliver two messages to their students. The content message tends to affirm civil libertarian, egalitarian, and democratic values. The process message—how classrooms and courses are run by faculty members—affirms medieval values. I believe that the process message, because it is experiential, is at least powerful as the content message. I have a hunch that it may be more powerful.

Our collusion stands as a barrier between us and taking up a legitimate leadership role in academic life. That role, I submit, necessarily calls for advocacy on behalf of the development tradition and of the faculty who attempt to make it a reality in their courses. Yet our self-descriptions ignore advocacy in favor of an exclusively service-oriented and reactive mission. Seldom, moreover, do our published descriptions of what we do reference the larger culture context. Thus, we speak of being change agents, but few of us have accepted the real

burdens and consequences of what culturally relevant change imposes in terms of political sophistication. We are, by and large, political babes in the woods. Like most Americans we shy away from the thought that power is significant, natural, legitimate, and necessary as a tool for social good. Certainly we fail to understand that decision-making in higher education is very political. Jeffrey Pfeffer of Stanford, in his recently published and important examination of *Power in Organizations* argues that there are five conditions which, when present, place power into play: interdependence of people and functions, heterogeneity of goals, high "issue importance," and dispersal of power. Can anyone doubt that, for faculty development programs, all five of these conditions exist?

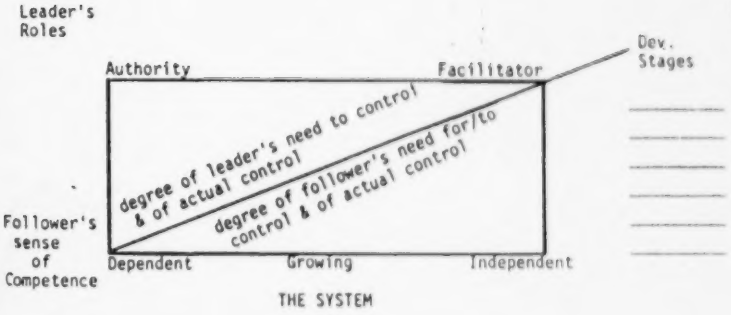
V. Taking Up the Empowering Paradigm

For all the pessimism that I have appeared to spread so liberally, I remain optimistic about the professional development mission. Apart from the fact that I am, by nature, an optimist, the more substantial reason is that we possess a very useful and important alternative paradigm. It can be transforming, if only because it has not been tested yet. Faculty by and large have not been asked to consider the implications of the dominant paradigm and to test it against the alternative. In short, we have not really forced a values clarification exercise in higher education.

In outline form the paradigm has been with us since early 1950s. Pictorially, it was suggested first by Robert Tannenbaum. Its psychological dimensions were first explored by the psychologist Richard de Charms. It is presented in Table III.

In its early presentations, it had a static character. Really it is a very dynamic educational model, one well worth careful, continuing exploration.

The model, in essence, is an idealized representation of all personal power relationships, situations in which one party has more power than another. Its dynamism derives from the recognition that any system is goal-seeking, that the subordinates in the situation present themselves with a variety of degrees of socialization and skills, that the superior in the situation has in fact a wide variety of behavioral



options for guiding subordinates' socialization, and that the effectiveness of the superior as a leader for most subordinates is a function of his or her appropriate reading and matching of subordinate developmental needs and motivational techniques. To be specific, the instructor of an introductory survey course taken by non-majors must recognize at a minimum that most of the students need significantly more authoritative organizing of the situation than do majors in a more advanced course in the subject. The underlying strategy for all instruction, however, is to provide each subject with sufficient opportunities for guided practice in each of the cognitive, effective, and/or psychomotor skills which form the important learning objectives of the course. The most common instructional mistake is either misreading the skill level and needs of the student or confusing lower level cognitive behaviors (memorizing solutions the professor develops to difficult problems) for higher order operations (independent problem-solving).

This paradigm is empowering because it holds open the possibility that subordinates can develop within the demands of the system, whether that be a course, a curriculum, a job, the family or some other organizational form. In this respect it honors the developmental tradition in learning, summed up so ably by one of our own members, Rita Weathersby and her colleague, Jill Tarule, in 1980. On that note, I urge

that we suspend methodological nitpickery in favor of attending to the direction of their thought, sufficiently well documented by hard evidence. They honor the Jamesian against premature judgments about other peoples' experience. The paradigm does not predict the rate if growth for anyone, but assumes that growth is attainable by most, if not all.

Faculty teaching behavior, within the terms, is disempowering because it is so fixated at the left end of model in Table III. The psychological reaction to authorization, uni-dimensional, and one-way communication structures tends strongly, for most students, to reinforce a sense of dependence, even helplessness, in the discipline. A low order of learning occurs. As a meta-message—one about the entire academic culture—consistent faculty behavior in the left side of the scale undermines those skills necessary to maintain the health of civil libertarian traditions.

The dynamic reciprocal psychological challenge in the empowering paradigm inheres in the struggles to ensure that students gain more control over the search for and definitions of meaning. It lies, therefore, in the subtle interaction of teacher and student in the processes of taking hold and holding on, falling principally on the student, and letting go and giving up, falling mainly on the faculty member. We owe an unrepayable debt to William Perry for describing so beautifully how the dynamic works and for reminding us that the essential strategies of teaching for learning are individualizing, structuring, challenging, pushing and pulling, and, most critically, supporting empathetically, perhaps empathically. In these respects, the model honors the civil libertarian, egalitarian, and democratic tradition.

Not only does the paradigm suggest that effective instruction is multi-dimensional, it depends upon honest and rigorous evaluation. It suggests, therein, an input-output-outcome model of assessment. It emphasizes learning as the focus. It insists that content and process are equally important in teaching/learning transactions and that the messages of both need to square with one another. And, as a variety of studies of effective classrooms demonstrated, the paradigm as an operational model is as self-fulfilling as the disempowering paradigm.

VI. A Note on Leadership

If I am correct in all this, there is still the question as to what we are to do to have cultural impact, to make a difference across most higher education. My responses will be inadequate as an answer, but may form at least the directional beginnings of one which each of us can flesh out later on. I would have us do three things:

1. Become expert in the cultures in which we work. Get to know their operating paradigms, their theories in practice as well as their espoused theories. Square those theories with one another and with the elements of the broader civil libertarian traditions. And become skilled in the techniques which Chris Argyris has spelled out for helping professionals to reconcile the discrepancies in healthful ways.

2. Accept Harold Bridger's challenge to change agents that each develop the courage to act in relation to his or her own development. I think that means, in the dire circumstances facing most professional development efforts in this economy, learning about the transforming uses of power. Look to David McClelland, James MacGregory Burns, Kenneth Eble, Victor Baldridge, and Robert Greenleaf. Become involved in the political decision-making processes of the campus, advocating the developmental message vigorously.

3. Finally, in the best developmental tradition, actively build internal and external resource networks for support, ideas, and material assistance for the important mission we have undertaken. POD, like any network, flourishes with use; it dies from disuse. I believe we need to become much more resourceful at networking than we have ever before.

It falls to us, perhaps even exclusively, to be forces for realizing the empowering promise of higher education, a promise observed more in the breach than in practice.

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Dreams and Actualities: Danforth Fellows in Mid-Career

R. Eugene Rice

In 1951, the bulletin boards of colleges and universities across the country began carrying the announcement of the Danforth Graduate Fellowship, stating that appointment as a Danforth Fellows was one of the major academic honors available to persons interested in preparation for college teaching. In the fall of 1979, the St. Louis-based foundation announced that the 1980 class of Danforth Fellowship recipients would be the last. Since the appearance of that initial announcement, over 3,500 Fellows have been elected, through highly competitive selection process, to one of the several graduate fellowship programs sponsored by the Danforth Foundation. More than 80 percent of the recipients of these academic awards have gone on to complete their degrees and are now serving on the faculties of, or providing administrative leadership for a broad range of colleges and universities across the nation—from Stanford to Onondaga Community College, from Harvard to New Mexico State. This is a study of the personal and professional development, of what actually happens to the dreams and aspirations, of these talented men and women whose careers from the start promised so much.

Three Distinct Groups of Fellows

The fellowship recipients represented in this study were drawn from three discrete groups. The first groups was made up of Danforth Fellows appointees in the 1950's, beginning with the first class of 1952

through the class of 1960. By now these professors are, for the most part, established, tenured faculty. All have been teaching for at least ten years and most are now confronting the perplexing problems that commonly emerge in mid-career.

The second group received their Fellowship appointments in the mid-1960's, Danforth and Kent Fellows appointed between 1964 and 1967. At the time of the study these Fellows had been teaching for approximately five years, were not yet tenured in most cases, and were living with the increasing strains that are normally attendant to that situation— strains that continue to be seriously exacerbated by the pressures of economic and institutional retrenchment.

The third group was composed of recipients of the Graduate Fellowships for Women, appointed between 1965 and 1970. Although most of these women received their Fellowships at approximately the same time as the younger Danforths and the Kents, and are closer in age to the older Danforth group, their personal and professional situations are quite distinct, and their perceptions of their lives as teachers are markedly so.

The opportunity to do the study arose when the Foundation, concerned about the future of the academic profession and the needs of college and university faculty in mid-career, decided to renew its relationship with Fellows who had completed their degrees and were well along in the pursuit of their careers. More than 300 Fellowship recipients were invited to two Faculty Workshops on the Profession of Teaching, the first in the spring of 1975 and another in the spring of 1976.

In preparation for the two Workshops, all the invited participants were sent the statements of personal and professional aspirations that they themselves had written when applying for their Fellowships, ten, fifteen, and, in some cases, twenty-four years earlier. Each Fellow was asked to submit a written response to that statement, reflecting on his or her own development during the intervening years. The participants were asked specifically to comment on the relationships between their stated aspirations and what actually happened in their lives, and say something about their successes and failures, to reflect on the integration of the personal and professional aspects of their lives, and to speak about how the institutions of which they have become a part have

influenced their personal and professional development. They were also invited to speculate briefly about their futures.

Eighty-five percent of the Fellows attending the Workshops responded to their application statements making for a total of 224 responses. Some of the responses were hurried and cursory—taking care of another bureaucratic demand. But for most of the Fellows the relationships with the Foundation has meant more than substantial financial support; it has been a genuine "relationship of encouragement" as was originally intended, and the responses were frequently long, thoughtful, remarkably open, and some beautifully written. This paper is an attempt to bring together the common themes and concerns, the developmental issues as well as the complex social/institutional/historical questions that emerge from these very private, personal statements of men and women chosen on the strength of uncommon promise—their potential for contributing to the profession of teaching.

Teaching: Dreams and Development

This study, like the recent concern for faculty development in higher education generally, is a part of a much larger societal interest in adult development. What youth, the "identity crisis," and Erik Erikson were in the sixties, "the mid-life transition," generativity, and Daniel Levinson have become currently. Levinson influenced the conceptualization of the first Workshop, attended himself, and the report of his research, "The Psychosocial Development of Men in Early Adulthood and the Mid-Life Transition," was sent to the participants with the request for their own developmental assessment.[1]

An important theme running through Levinson's research on the life history of adults is the significance of the dream or vision of one's own future as a "vitalizing force for adult development."[2] In their own original statements, when applying for the Fellowships, the Fellows were compelled to articulate their dreams, their visions of their futures. The responses called for an assessment of those dreams. As might be expected, there were a rich variety in the many sensitive, sometimes painful statements. Some of what was recounted was highly idiosyncratic, but much was held in common, shared particularly within the three distinct groups of Fellowship recipients. Common social condi-

tions—economic, political, and symbolic—had a profound impact on the interrelationships of dreams, development, and actualities.

The 1950's Fellows. The Fellows appointed in the 1950's found that there was extraordinary continuity between their career aspirations and what had actually happened to them professionally; while at the same time, they were most struck by the disturbing disparity in their understanding of their world, themselves, and what it finally meant to teach, day-to-day, in a college or university.

A number in the older group of Fellows began their statements with comments similar to the following: "The most immediately surprising thing is the closeness of the stated aspirations and what actually happened in my life." They were speaking primarily of the expected profession in their professional career patterns—completion of advanced degrees, first teaching appointment in accord with expectations, tenure in due course, and the appropriate promotions. Without detracting from the significant accomplishments of this group of Fellows, it should be noted that they were entering the teaching profession at a very propitious time—new programs were being developed, funds were available for expansion, higher education was in its heyday. Aspirations to teach in "a small, Christian-oriented, liberal arts college" were turned aside "with a modest sense of guilt and regret." As one 1957 Fellow who is now on the faculty of leading research university on the West Coast put it: "I wanted to see if I could do it at the big U—and it was clearly a choice to go for the 'status trip'." These were hard choices—but choices, nonetheless, options that in retrospect seem almost unique to the time. Most of the 1950's Fellows are very much satisfied with their decisions. A 1955 Fellow, acknowledging how really fortunate this cohort of professors was and is, states candidly: "Status in academic positions in recent years is far more a matter of where one was able to situate himself in the mid-60's than any matter of ability.

The congruity that the older Fellows found between earlier aspirations and their basic career pattern was not as immediately evident when they turned to issues that were more symbolic—issues having to do with meaning. The larger religious questions, questions of value, and the context of meaning have always been important in the Danforth Fellowship program. In addition to academic ability and a clear

commitment to teaching, Fellowship candidates were expected to demonstrate a concern for the significance of ethical or religious values. In reviewing their original statements of aspiration, almost all of the 1950's Fellows spoke of being "amused and embarrassed," "somewhat shocked," and not recognizing the "me" who wrote the earlier statement.

References to sources of transcendent meaning and work, one's "vocation," were inextricably intertwined in most of the initial statements. There was no doubt that the profession of teaching would be fraught with significant meaning. As a senior at Notre Dame (not all the older Fellows were descendents of Max Weber's "ascetic Protestants"), one Fellow wrote: "If vocation of the Christian teacher is anything, it is to help form in young people a *humble* knowledge, a *loving* understanding, a *reverent* love of the mystery of human reality, of being of God." That was a lot to expect of one's work—even teaching—as most were soon to find out.

For a number of the older Fellows the religious language that meant and expresses so much in the fifties still resonates. A Fellow in the original class writes: "In my middle years, I consider myself more than ever committed to the Christian faith." Many, however, are struggling to find a new metaphor, a new rhetoric to express that which gives meaning and significance to life. One writes:

> My metaphor...now would be an artistic rather than a religious one. I would talk, with Mrs. Ramsey of Virginia Woolf's *To the Lighthouse*, of seeking form to hold off the flux of the fluidity 'out there'. That would be my 'ordeal' rather that "the demands toward perfection which God makes upon both our souls and our intellects'"

It will be disconcerting to some to find that the winners of the national fellowship competition—presumably among the best of the graduating seniors in those years—reflected so directly the temper of the times. Eisenhower was in the White House eulogizing "deeply held faith" as the bulwark of the nation, and the religious "revival" of the postwar years, in stride with the baby boom, hit its peak in 1957. In reviewing their earlier statements, the 1950's Fellows found them to be "naive," even "innocent" and "bland." They were bothered by the

"tidiness" and the "certainty." A 1959 Fellow, now a professor in the University of California system, compared his old and new selves:

> I missed a sense of playfulness, a dash of irony, some bite of wit, a bow to complexity and ambiguity...The 1958 self seemed vulnerable to unexpected challenges to his beliefs and expectations; the 1975 self, for better or worse, thinks of himself as more tough-minded, more skeptical of easy answers to complex questions, more willing to admit his own creature has within the forced matrix of history and culture. The 1958 self, with a broad and rather unreflecting brush, painted big, sweeping words like "Ideas" and "People." The 1975 self is more at home with quotation marks, to indicate "perspective."

The transforming impact that effective teaching was to have on students and society-at-large has not been as fully evident in the experience of the 1950's Fellows as they had hoped earlier. "After ten years of teaching," one wrote, "I'm afraid I find my career as a teacher far less satisfying to me, and far less significant to the lives of my students, than (is indicated) in these enthusiastic words." Another comments: "I am soberly (somberly) aware of limitations for changing another person 'for good'."

It is not teaching in the classroom, however, that is the major source of discouragement for these Fellows. In fact, most would rather agree that: "...the teaching function is the one that is personally sustaining, and the one that continues to mean the most." What is most disheartening for these Fellows is all the other "stuff" that is a part of the profession of teaching: the vacuous relationships with colleagues, the competitive ethos pervading departments, meaningless committee work, and an inappropriate and/or unjust reward system.

The depth of discouragement found among some of the 1950's Fellows now in mid-career is expressed in this statement: "I feel I was almost completely unprepared for professional disappointments, pettiness, intellectual laziness (in others and myself), and sheer exhaustion." Another queries: "But when does 'settling for less' become not a mark of maturity but of fatigue? I fear the latter, and sense a deep need for a source of refreshment and renewed vigor. I do not see where it will spring from." That same Fellow, more "professionally successful" than most, gave expression to a feeling that comes to him in his worst moments: "That terrible sense of hollowness: hollow col-

leagues, hollow students, hollow self, engaged in a ritual with its core meaning sucked out."

As both Calvin and Freud know, the significance of work is derived from a larger context of meaning. In discussing the importance of work, Freud points out that "in his work (the individual) is at least securely attached to a part of reality, the human community."[3] Robert Jay Lifton, in his most recent book, carries the argument further.

> What we call work is a uniquely important boundary between self-process and social vision. Perhaps for the first time in history very large numbers of men and women are beginning to demand harmony and meaning at that boundary; to demand a reasonable equation between work and "works."[4]

Since the 1950's, American society—its colleges and universities particularly—have passed through a period of severe historical dislocation. The older academic community and the symbolic context that provided meaning for the profession have been radically altered. Many of the Danforth Fellows who began their careers in the fifties, in that other world, are now having to face up to the symbolic consequences of that historical dislocation. They are openly engaged in a process of resymbolization, that they hope will provide the kind of meaning for their work—their profession—that Lifton suggests is now being demanded.

Fellows Appointed in the Mid-1960's The undergraduate careers of most of the Fellows in this group coincided roughly with the Kennedy years, a time filled with the hopeful rhetoric of the New Frontier, the Peace Corps, an envisioned Camelot. Several had themselves been Freedom Riders in the South, and in August of 1963 had been present at the March on Washington to hear Martin Luther King's "I Have A Dream." They had sung "We Shall Overcome" often and with confidence.

The youthful idealism that characterized the application statements of the 1950's Fellows is abundantly evident in the statements of this group. The religious concerns are there, but the expressions of confidence are less personalistic and have more to do with social and institutional life—justice and change. There was the conviction that talented people with perseverance and new, imaginative strategies

could substantially influence established institutions. And there was the confidence that higher education—the teaching profession, particularly—was to play a key role in effecting institutional and societal change.

The events of the past ten years and the individual experiences of these Fellows have eroded that earlier confidence. And the erosion is serious, qualitatively different from the "de-illusioning process" that Levinson and others find normally occurring in the development of young adults.[5] The extent of the disillusionment and some reasons for it are immediately evident in the responses of this Kent Fellow:

> Then, I "knew" that people could be made better and the world could be saved through education. Now, rather, I hope for that, but with a hope that seems increasingly qualified and limited. And as the ideal fades, the sense of mission that accompanied it is increasingly dissipated, and I struggle against a growing indifference (forced adaptation? realism) and cynical entrenchment.

For another, the disillusionment has turned to bitterness:

> It's hard to keep the bitterness out. At this moment in time, we're all victims; we all have something to be bitter about. Yes, I mean the absence of the "Liberal Dream" (whatever that was) of the Sixties (could it have been, simply, the vision of a workable multi-ethnic democracy, a sense of shared purpose in individual lives?) Yes, I mean the prevailing winds of the economy, against which all defenses of ego and ideals are like a paper bag in a hurricane. Yes, I mean all the betrayals, petty and great, willed and unwilled, which leave us the victims of a spiritual landscape from which alien anthropologists might extract samples drier than any moonrock. Handfuls of dust.

A number in this group of younger Fellows had difficulty with what one aptly calls the "herculean fallacy." It took a variety of forms, but for this 1966 appointee it referred to: "My deluded impression that my own passionate interests would somehow remake my social and professional environment, with its rigid demands." Along with many beginning their teaching careers in the early '70's, he found that:

> The available world is just too tough for that, its patterns too well entrenched. Confronted with this dismaying discovery, I have taken comfort in the fact that most of my admired and respected friends have

> discovered the same—or very similar—things. I have also had to give considerable thought to strategies of professional survival. A great deal of my energy has been absorbed with the questions of how to make a career I can myself respect....

In their original statements, the Fellows applying in the mid-60's, often used religious language to express their basic values and commitments. However, the use of religious language, in contrast to the applicant statements of the 1950's Fellows, is much more restrained. In their 1975 and 1976 statements, what is most striking, given their comments, is the extent to which the faith itself has been abandoned. One '64 Danforth wrote: "...I was frankly embarrassed by the outright and unqualified profession of belief in Christian doctrine, a belief abandoned within a year or two after the statement was written." Another said: "religion which once was important to me is now a forgotten part of myself."

Particularly intriguing was the extent to which those trained in religious studies were reluctant to use the language. This statement is typical: "Increasingly, I have moved away from expressing my own beliefs and values in theological, or perhaps even in religious terms." Another, taking a stronger position, but one that is significant given the Foundation's concern for religious values, wrote: "I think it is fair to say that now the Christian tradition is of interest to me only as an historical phenomenon. I would never be tempted to articulate my deepest concerns today in Christian or theistic terms." In reference to his teaching he goes on to say: "I am reluctant to reveal the depths of my own indifference...Fortunately, I rarely have to state my own convictions explicitly."

The immediate overriding concern of the 1964-1967 Danforths and Kents—some not yet tenured—is the impact of the institutional retrenchment on their lives. In a summary of one of the Workshops, Elden Jacobson, a 1975 Danforth Fellow, captures the mood of the younger group in an account of their reaction to a comment made by Daniel Levinson in his address to the gathering.

> In his soft, often hesitant, manner, Levinson casually noted in his own autobiographical statement the fact that he had moved, in 1964 or 1965, from Harvard to a tenured position at Yale; too, he observed, a genuine

> sense of the human tragedy did not seem possible to him until one had lived through (and survived) the crisis of mid-life; that is to say, the early forties. "That is simply absurd," said one young academic who, in his mid-thirties, has just been denied tenure at a mediocre state college. "Harvard to Yale, for Christ's sake!" decried another. With varying degrees of intensity, younger faculty insisted on describing their situations with the language of hopelessness, with an impotance to respond save in frustration and anger. They are—or perceive themselves about to become—unwilling elements in a floating card game where one grabs whatever is dealt. This issue is survival.

For many of the younger faculty, whose "dreams" were nurtured into being in more optimistic and prosperous days, the full realization of those aspirations is blocked by a situation marked by restraint and limitation. This is true even for some of those having more secure positions, they feel boxed in—trapped. In the words of one Kent Fellow:

> Above all I want to avoid the acceptance of my present as permanent. In short, I am struggling against "settling down." Yet at times I feel I am dying a slow professional death in my present position. But given the present situation in academia (depressed) there may not be a ladder to climb.

According to Daniel Levinson's developmental scheme, a period of "settling down" in the early thirties is followed by a burst of growth and change that begins in the middle thirties. Levinson calls it the BOOM period, Becoming One's Own Man. When the statements of these younger professors are viewed in the light of Levinson's developmental theory, one wonders what will happen to this group of young faculty who will enter the BOOM period with no place to go, yet not being able to "settle down" where they are, pulled on by a dream cultivated in a more buoyant time. As one Fellow, appointed in 1967, put it: "Staying put is hard for those accustomed to moving on."

Graduate Fellowships for Women, 1965-1970

The recipients of the GFW awards who have been included in this study received their Fellowships between 1965 and 1970. Almost all are now directly engaged in college or university teaching, although

a number are struggling with problems that continue to plague faculty members with part-time appointments. These women are confronted with the same depressed job market as the younger Danforth and Kents, but their perceptions of their situations are quite different—much less pessimistic on the whole, despite the added burden of not only sex discrimination (affirmative hiring has had little real effect), but because they are older and are being discriminated against on the basis of age.

Although one woman echoed the Danforths and Kents in saying: "I wish that I had gone into my profession with my eyes open just a little more widely," the GFW's seem much better prepared to adapt to the changing situation in higher education. It could be argued that they are better able to cope with adverse change because they have all had substantial experience outside of academia; and, as a consequence, are capable of viewing the academic profession and the university as an institution in a comparative way. For most Danforths and Kents this is not the case. They have moved, until most recently, from one success to another, all within the confines of the academy, and are having to face professional reversals for the first time, ill prepared. The GFW's in contrast, have been, as the sociologists would say, socialized for contingency. They have had to constantly adapt to a disorderly career pattern. Their own plans have had to be altered regularly to accommodate the demands of marriage and the family.

The GFW's are facing retrenchment in their profession with greater equanimity, partly because their aspirations were tempered by the time—no mention of Nobel Prizes in their original statements, but also because their experiences have prepared them to be more flexible and adaptive. An admittedly extreme example is found in these excerpts from the response of a GFW who, contrary to what might be expected, does not have the support of a spouse:

> I found my niche, my special work my delight at (a private urban university). What can count more than that...I plan to move laterally to my next job; i.e., same rank, more interesting job. I look at jobs in terms of the excitement (or people, of ideas) I will get from them...For an exciting enough school I would be not unhappy with going 'down' the ladder to an instructorship. If nothing shows up (and something always does), I can stay where I am, redefining my job to increase my

> satisfaction and build outside activities for this same purpose. Thinking about learning math; perhaps an MBA.

This more optimistic, adaptive spirit identified with the GFW's is clearly evident when the GFW's are compared with the other two faculty groups in this study. But, when the 1965-1967 GFW's are compared with the more recent 1968-70 GFW appointees, a significant qualification must be made. The more recent GFW appointees are less hopeful, the strains are evident in their responses to their application statements. One writes: "The exuberance conveyed in the buoyant tone has changed and darkened. I see those beliefs now as haloed islands in a rough and turbulent academic sea of fiscal fear and lop-sided priorities." The policies of "last in, first out," and "full-time work for part-time pay," to which many of these women are being subjected, just at a time when they are being encouraged to expect more, have begun to take their toll.

In comparing the responses of the three groups of faculty members, one is immediately struck by how much more seriously the women take their familiar roles—parent and spouse— than do the men. In making this generalization, it should be pointed out that we are talking specifically about GFW's appointed between 1965-1970. During the decade of the 1970's more than half of the Danforth and Kent Fellowships went to women. There is reason to believe that these women will relate the personal and professional aspects of their lives in ways that are substantially different.[6]

A 1966 GFW who is not a department chairperson in an important Eastern university, speaks for many of the women appointed in the early years of the program when she writes:

> I approach both my studies and my profession with eagerness and dedication but never with the intention of allowing them to supersede family priorities. I felt then, as I do now, that success and achievement are exhilarating and deeply satisfying and that I would like them, if possible, to be part of my life. However, they would be totally empty and meaningless unless I had a loved one by my side to share the trials and the pride, and a loving home and family atmosphere within which to replenish my soul.

These commitments have created serious professional problems as might be expected. Good positions have been lost where family responsibilities have been given precedence, and some guilt generated when compromise was required. A 1967 GFW writes enthusiastically about the challenge of teaching older students and the changes she was able to effect in her department, but then adds:

> The institution of which I was a part...contains enough diversity within it to be a great home for me. There is no doubt that I would have been the next department chairman in our college, had I not had to leave, BUT, unfortunately, my husband's job change necessitated our move...and now...I will have to start all over to carve out a situation where I can work and be appreciated for what I am. I don't feel hopeless about this, but...

Even for those who have worked out a "well-balanced and satisfying" relationship between the personal and professional aspects of their lives, there is always the threat that a change will be required that will not be of their choosing. One writes: "I would like to be more in control of my own situation, and have to push myself to take life as it comes, rather than as I would choose it to be."

During the 1960's the roles of wife and mother were so thoroughly denied in the culture that professional roles for women were made distinctly secondary. Danforth fellowship policy directly reflected the sexism of the times and women were officially excluded from the Program from 1956 to 1964. Now it is the professional roles that are being given priority among the women Fellowship recipients. Ambivalence was evident in the 1950's as it is currently, but the emphasis in both periods is clear. The integration of love and work is hard to come by.

The GFW's appointed in the early years of the program have been caught in the transition from one emphasis to another and are trying gallantly to combine the best of both worlds Several write of schedules of 16 to 18 hours a day trying to meet the demands of their multiple roles. A 1967 GFW spoke of going through "periods of almost complete professional and personal schizophrenia..." A striking illustration is drawn from her graduate and school experience . "For years I took the bus from home to library and back, though I could have used

the car, in order to give myself time to shift gears from personal and professional and back again while someone else shifted the actual gears." Having taken a teaching appointment located eighty miles away from her home the old schism is exacerbated even further. She concludes: "My husband is openly unhappy about the arrangement...I honestly don't know how long our family can survive this."

The GFW's struggle to overcome not only the bifurcation of the personal and the professional aspects of their lives, but are also wrestling with the separation of intellectual theory and analysis, on the one hand, and lived experience, on the other hand.

The sense of solidarity and the changes in consciousness engendered by the women's movement has been of critical importance here. Older patterns of authority, both intellectual and institutional have been profoundly relativized and are being challenged. As 1970 GFW puts it: "To consciously identify with the interests of women in a patriarchal world is to take a political position, a pleasure I no longer deny myself." The definition of the profession itself is being subjected to a serious critique.

The GFW's included in this study are an impressive group of professional women who have committed themselves to an almost impossible constellation of roles. There is a realistic quality faced squarely, and there is a resilience in the pursuit of those aspirations that should make them especially effective in dealing with the new challlenges and restraints in the difficult days ahead.

Becoming Professional

The incongruity between the ideal conception of the profession of teaching that enticed the Fellows in formal preparation for the profession was most difficult to assimilate. The majority of the Danforths and Kents had spent their undergraduate years in small, private, liberal arts colleges—often church related. For graduate school contrast between the two extended well beyond size and sophistication.

During the late 1950's and the 1960's, when the faculty members under consideration here were engaged in graduate study, graduate departments were proliferating rapidly and becoming more narrowly specialized. This combination of rapid growth and differentiation had

a profound effect on the profession and the students preparing to enter it. At the same time, Danforth Fellowship recipients were being selected on the basis of their broader talents and interests, a more holistic, integrated approach to the profession and their lives in society. The experience of many expressed in the statement of the English professor: "My graduate work in English at Columbia seemed increasingly distant from any life goal I had."

For many Fellows engaged in graduate work in the mid-1960's becoming professional was something to be resisted. A 1965 Danforth Fellow writes: "Graduate School was a long period of resistance to the professionalism, impersonality, and poor teaching I encountered." Another in that same class confesses that to become professional meant that: "my interest became more limited, parochial, more scholarly than intellectual." After seven years of university teaching this same Fellow still felt "an unhealthy conflict between so-called professional considerations, as inculcated in graduate study, and more humane and value-oriented possibilities, for which I chose this career in the first place."

The Fellows' references to their graduate school experiences underscore the importance of the role of the teacher as mentor. Where there was a professor who was willing and able to serve as a mentor, and where the relationship was constructive, the overall assessment of the years of graduate study is much more positive. Daniel Levinson defines the mentor as one who "fosters the young person's development, not only by instructing him but also by believing in him, by sharing the Dream, by helping to create a space within which a newly emerging self can take shape and be given a place in the world."[8]

A 1959 Danforth Fellow describes the helpful role that a graduate school mentor played in resolving an important professional issue with which he was wrestling:

> A master teacher, with his skills sharpened to a fine edge by a decade spent in a liberal arts context, he nevertheless had research credentials sufficient to permit mid-career movement to a major graduate institution. As a mentor/role model he could therefore reinforce my own commitment to and interest in teaching while at the same time demanding a high level of competence in research skills. Over the years my internal resolution of the teaching/research issue has been to see them

> as aspects of the same intellectual process and I have come to think that for me personally the best teaching is done when both student and teacher are actively and collaboratively involved in the research process.

It is unfortunate that mentors of this sort were in evidence so seldom in the graduate school experience of these promising teachers. The judicious guidance of an experienced, thoughtful mentor is one of the best ways to provide a sense of vocation that has challenge and meaning and yet is also balanced and appropriate for the time.

Colleagues

Viewed from the outside, the life of the professor seems particularly rich in opportunities for sophisticated intellectual exchange and enlivening participation in a community of scholars. In their original application, many of the Fellows wrote effusively about the value of being a part of such a community. Their most recent statements indicate that this particular part of their professional "dream" had been a source of severe disappointment. Many complained of the "paucity of professional dialog", and a 1965 Danforth laments: "I an increasingly aware of the deadening effect of the faculty, a group at least as political as intellectual, indeed, a group that is even anti-intellectual precisely because it holds so tightly to its own narrow intellectability."

In a few of the smaller church-related colleges a sense of community and collegial support continues to flourish, but they are the exception. This statement from a professor in one of the leading private universities in the Midwest is more representive: "The paranoia and rivalry that I first encountered among my peers in graduate school days seem to be firmly entrenched dispositions in all levels of the academic profession."

Retrenchment, with the attendant competition for shrinking resources, had increased the isolation of colleagues from one another. The strain between junior and senior faculty— particularly in the more prestigious schools—seems to be getting especially bad. Junior faculty are often viewed as transients—just passing through. If collegial decision-making patterns ever did exist in departments and schools they are rapidly disappearing. A Fellow who had just survived a

severely contested tenure decision in a leading professional school rendered his own judgement on the process of decision-making in one of our best universities: "Critical decisions are made by a self-delegated elite who seize power and impose their decisions upon others by methods I consider unethical."

The quality of teaching and its improvement depends in large measure on what has been referred to as "pedagogical colleagueship," the sharing of ideas and resources, direct observation, and the discussion of one another's teaching. If relationships among faculty are no better than is indicated in these Fellows' statements, the trust, respect, and critical support required for the maintenance of quality teaching is obviously lacking. Something must be done to counter the debilitating effects of the competition for advancement and the struggle to merely survive in a shrinking market.

Love and Work

The coordination of multiple roles—relating the personal and professional, particularly—has become increasingly difficult and emerges from this study as an issue of critical importance in the lives of faculty. This immediately evident not only in the statement of the women included in this inquiry, but permeates the responses of the men as well. In his 1959 statement a Danforth Fellow wrote with pride: "My wife-to-be is in complete accord with my plans and dreams." His more recent response points out that "There is no mention of her plans and dreams, largely because we both automatically expected her to live vicariously through my career." Those days are long past, finis. It is clear from the Fellows' statements that that sort of life structure is no longer an option, but finding a viable alternative is the source of considerable personal anguish. A 1960 Danforth writes: "The great change in our family pattern has ultimately been liberating, but the process has involved highly complex changes of roles with all the attendant confusion, uncertainties, and competition among family members of the family." Shortly after this statement was written, divorce proceedings were initiated. Opportunities for intelligent reflection on the consequences of these fundamental changes for the

structure of our lives are all too rare, and can no longer be dismissed as professionally irrelevant.

A Sense of Institutional Drift

An overriding concern highlighted by this inquiry has to do with the fundamental purposes of the university and the raison d'etre of the profession itself. As an English professor from a large state university in the Midwest put it "I can't find the social ground and purpose of the activity my students and I mutually engage in. The same professor goes on the summarize the profound concern that many faculty have about the profession:

> My profession seems to me to flounder, to have lost faith in its old models (and in the exemplary critics who personally embodied those models) and to be unable to find new ones...The result of floundering is a loss of cohesiveness and therefore a constant strain on intellect and emotion. Having lost the common ground that should nourish us, each individual has to invent his profession for himself.

The dreams, the professional aspirations articulated by these men and women at the beginning of their academic careers, confidently addressed questions about the purposes of the university and the contributions that one could make through the profession of teaching. In retrospect those original statements are seen as innocent, if not ill-informed, and, at points, incredibly naive; but there is a sense of bearing, of direction.

The intervening years have brought severe dislocation, some fragmentation, and an inchoate awareness of institutional drift, of aimlessness in both the university and the profession. Lifton has written persuasively about the deep uneasiness resulting from the contemporary breakdown in the shared sense of coherent meaning that is wide-spread in most of the professions. Following the lead of Thomas S. Kuhn, he finds the psychological professions boardering on a momentous shift in paradigm.[9] The personal statements that inform this study suggest that the academic profession(s)—can the singular be used?—are in a similar place, having to confront the same sense of "psychohistorical dislocation."

What is needed now is a reconstructed dream, a reconceptualization of the place of higher education in the society, that benefits from the historical chastening of those intervening years, but that goes on to provide the ideational base for a new integration, a coherent sense of direction, for both the university and the profession. Dreams can serve not only as a vitalizing force in the personal and professional development of individuals, but can contribute to the revitalization of institutions as well.

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[2]*Ibid*, p. 248.

[3]*Civilization and Its Discontents*, Doubleday and Company, Inc., Gade City, 1958, p.21.

[4]*The Life of the Self: Toward a New Psychology*, Simon and Schuster, New York, p.142.

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[7]Cities in the "Review of the Danforth Graduate and Kent Fellowship Programs," December, 1970, p.8.

[8]"The Psychological Development of the Student in the Psychology Graduate Department," Paper presented at the American Psychological Association, August, 1973, p. 11. Also, see *Seasons of a Man's Life*, Alfred A. Knopf, New York, 1978, pp.97-101.

[9]*The Life of the Self*, pp.151-171.

The Unaccepted Challenge: Faculty Development For Women

Michele Fisher*

There is a group that has too long been neglected by a movement that claims an especially broad and humanistic vision for higher education. The movement is of cource faculty development, the neglected group women faculty and graduate students. To replace neglect with effective action, faculty developers must begin to share strategies for first understanding, then changing the situation of women at all ranks and levels of academia.[1] This paper presents one such strategy, together with a series of practical programs that developers can initiate.

Before I go on to discuss this strategy and various programs, I want to anticipate the sentiment that the responsibility for women's situation in academia properly belongs elsewhere on and off campus—in an affirmative action office, a women's center, a committee on the status of women, the provost's office, caucuses or subcommittees of professional organizations, state or federal legislatures, even the courts. Certainly I am not arguing that the faculty development effort should usurp these other agencies or expect to succeed alone where they—after years—have achieved little. Rather, it is increas-

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ingly obvious that the full participation of women in academia requires fundamental changes in the basic organization and values of colleges and universities: to more opportunities for fully legitimized part-time employment; to more frequent hiring of an institution's own Ph.D. graduates; to more support for the reconciliation of competing personal and professional obligations; to a reconsideration of what constitutes legitimate areas and lines of scholarly inquiry. Since recent court cases indicate that such changes have little chance of being imposed from the outside,[2] the driving force for reform clearly needs to originate from those already on campus. Among these, the local faculty developer—with an understanding of and influence over the instructional and organizational development of the institution—is uniquely equipped. Unfortunately, this expertise has yet to be fully mobilized for the nurturance and professional advancement of women academicians.

Once mobilized, there will be a very practical bonus to faculty development as a result of its involvement with women. It will gain new energy by reaching out to a group that, like it, feels the need for new values and approaches in the academy. Women, after all, have long been associated with the teaching rather than the research function of higher education.[3] Partly this seems a result of their clustering in the ranks of part-time instructors and junior faculty, but certain surveys indicate that women academics simply value their teaching roles more than their male counterparts do.[4] Women who have taught in Women's Studies or worked in women's groups are even more likely to have had to rethink the usual teaching methods and traditional curriculum. Many of them have described both the difficulty of establishing the legitimacy of their nontraditional courses and the exhilaration of teaching materials that require a different relationship with their students.[5] When a year-long course on Western Culture was recently reinstated at Stanford, some of the most significant criticisms of its heavily traditional content and classroom organizations came from women faculty members experienced in feminist research.

But even if faculty developers decide to lend effective support to the efforts of women faculty and graduate students, how do they begin? This is where developers must begin sharing ideas and information. I offer one possible strategy.

First Steps

Since most college campuses today have some type of women's groups, a faculty developer is well advised to begin any programs for women only after careful review of existing groups' materials and concerns. Women faculty of graduate students who have been prominent in Women's Studies programs or committees on the status of women are also natural contacts. Discussions with them can help determine how women on any particular campus perceive their situation and whether they have identified unmet needs. They may also offer insights into the administrative attitude toward women and the political climate a developer can anticipate in entering this ground. They are an excellent source of information on helpful background reading. Consultation with women known to be indifferent or hostile toward a feminist analysis of their situation is also necessary since they too are potential constituents but may only attracted to programs if no obvious ideological tone is attached.

With the groundwork thus laid, a developer may still be advised to try his or her first programs in co-sponsorship with an existing women's group of an informal coalition of women. This will make it less likely that territorial issues will arise or complicate future efforts. Through such collaboration a developer may also discover that a consensual or highly egalitarian style of program is preferred and adapt offerings accordingly.

If all this suggests that there are possible pitfalls to working with women, there are. The feminists among them are deeply concerned with issues of authority and power on our society and take these matters seriously on whatever level they find them, including choosing speakers for a program or whether a speaker is even appropriate. They will be especially concerned that programs for women neither reinforce stereotypes, nor patronize. The consolation, as I have experienced it, is that activists on women's issues place a particular value on recognizing people's efforts; they know the importance of "strokes." A developer will find the warmth and supportiveness of a women's community a welcome antidote to the variety of demands that burn out faculty developers just as much as other "helpers."

A developer will want to continue to use this women's network in deciding what further programs or services his or her office should offer to the campus. To open up the options, I suggest below some steps that could be adapted to most institutions.

Programs For Graduate Women

Although women are entering doctoral programs in ever greater numbers, even in the overwhelmingly male-dominated fields of engineering and physical sciences, women doctorates continue to lag behind their male peers in the ranks and salaries that they achieve in academe, particularly at elite colleges or research universities. This situation persists in spite of considerable pressure on post-secondary institutions to use affirmative action hiring criteria.[6] Researchers have identified causes ranging from an extreme on one side of discrimination by men to an extreme on the other of a fear of success among women.[7] While faculty developers may not feel competent to treat either of these phenomena, they should offer other types of assistance:

(1) Forums — whether a panel, a workshop or a brochure — through which experienced or recent faculty women can share their own strategies for having "made" it with those who are still struggling. It is particularly useful if these women talk about how they dealt with such problems as: reconciling their career goals with those of their husband or significant other; finding support for research in a nontraditional are a like Women's Studies: handling sexist behavior among peers or from a mentor; establishing the seriousness of one's career commitment in spite of children or moves with a husband; developing confidence that success is possible in spite of a lack of obvious role models.

Commentators might also be counselors or sensitive male faculty members or career specialists. There are advantages, however, to using only women faculty, at least on certain occasions. Graduate women are often eager to talk to women who have made it but hold back because of the mentoring or service demands already placed on these faculty. A panel not only gives the graduate women an opportunity to ask their questions but allows the faculty women to mentor in a large-scale, time-effective manner. At Stanford, the faculty who

participated in such a forum remarked that they welcomed such opportunities to provide help to others in a way that did not sacrifice an undue amount of their own much needed research time.

(2) Forums that provide an inside view of the hiring process for assistant professors, laying stress on the informal mechanisms that operate in the selection of candidates. Such workshops should open to both men and women graduate students but are more crucial to women, who often still fall outside the information and patronage system known as the "old boys' network." Both male and female students should also be briefed on what affirmative action means in actual practice — to allay misconceptions or fear that it results in employment of candidates with poor credentials but the right sex or race.

(3) Programs sharing what little is known about the career patterns of academic women. Graduate women should be aware that their careers might not exactly duplicate those of their male peers and that pressure from them can eventually influence universities to accommodate the differences.[8] Some institutions already give one-year extensions, for example, to assistant professors who bear a child during the years they are going for tenure.

(4) Assertiveness training workshops. Again, these can be offered to both men and women students—as they are at the University of Texas at Austin[9]—but women especially benefit from strategies to determine and defend their just rights.

(5) Research tracking your own institution's graduate women and their placement record. If research reveals that women are suffering significantly higher unemployment rates or ending up in less desirable positions, then the causes should be sought and publicized to the rest of the university, including relevant deans. There may be a local agency—such as the Center for Women Scholars in San Francisco—that is carrying on similar research and might suggest remedies.

(6) Cooperation with other groups on campus that may already be working with graduate women. Since women Ph.D.s seem to fare less will than male peers in industry as well as academia, faculty developers should cooperate with on-campus career counselors to sponsor programs on alternative careers and obstacles women face there. Counseling services should be encouraged to offer self-esteem of

mutual support workshops to graduate women eager to stay in academia but uncertain—in spite of superior record—of their right to be there.

Programs For Faculty Women

During the 1970s there was an increase in the proportion of assistant professor positions that went to women (although no increase in the absolute number of women thus employed).[10] These women are now in the pipeline: the 1980s will see whether the y survive and move into the ranks of associate professor. Already there is some fear that they are not surviving, that the open door has become a revolving door.[11] Faculty development can play an especially significant role assisting these women to tenure.

Obviously, that role will be secondary to the part played by departments and the institution as a whole but many of the programs that have been outlined for graduate women could, with modification, be usefully extended to faculty women. Certainly they may be as eager to share with each other, as with their same sex students, strategies for reconciling the personal and professional, meeting mentoring demands, carrying on feminist research, and dealing with male colleagues. Some activities, however, should be specifically designed for them:

(1) Meetings for those teaching in women and minority studies in which solutions to common problems are stressed. Besides the changes in teaching approach mentioned earlier, teachers of women and minority studies share other concerns—a sense of marginality, a vulnerable place in the curriculum, a lack of colleagues, isolation in their own department. By meeting together, not only can such faculty share solutions but they are more likely to evolve coalitions that can influence the institution overall.

(2) Workshops on the institution's tenure and promotion criteria. As in the case of the workshops for graduate students on the hiring process, these would be for both men and women but would benefit women more by opening up the process to scrutiny and discussion. In various studies, women scholars have identified the lack of objective criteria in the promotion and tenure process as the chief obstacle to

their success.[12] The opportunity to discuss this process might not only ease some women's suspicions but encourage the development of more objective criteria.

(3)Assignment of new faculty mentors.[13] Once again, these assignments could be made for both and men and women but would be especially helpful to the young woman whose department has no one else of her sex or field of interest. Mentors can be of the same or different gender or department but should understand the institution well and be able to give frank advice on committee assignments, research efforts, teaching problems, or departmental politics.

Finally, there are several efforts that would benefit both graduate and faculty women. Although some might seem of a largely cosmetic nature, they are important and necessary reminders to any institution that even in 1982 "colleges are 'bastions' of sex bias"[14]:

(1) Devote an issue of your faculty development newsletter to women in higher education, or to the situation of women on your campus, or to experience in teaching Women's Studies.

(2) Sponsor regional or all-campus panels and conferences on the issues just named.

(3) Develop a section of your faculty development library into one on women in higher education.

(4) Make certain that in general your public functions include women speakers in a proportion that matches, if it does not exceed, their representation on campus.

(5) Offer child care during all day or weekend activities.

Conclusion

There are, of course, some caveats. By focusing attention on women, I don't want to imply that they are more deserving than men, nor more troubled, nor more in need of help. I want to imply that for several reasons—biological, social, historical—the issues that confront them are in some measure different from those that affect men and thus demand a different response from faculty development.

Neither by focusing on women do I mean to imply all women faculty members want or favor the programs that I have described any more that all male faculty members have responded to development

activities. As Jessie Bernard has written, "The population of academic women is itself no more homogeneous than is the total population of academia."[15] "Queen bees," women who made it before the days of affirmative action or "raised consciousness" and feel other women can do it too if they are just good enough, certainly exist. There are also women, of course, who will perceive faculty development as hopelessly incapable of the profound transformation they envision not only for academia but for all of our society. With their sights on the long run, they would spurn such amelioration of the present situation as I think faculty development can achieve in the short run.

Even conceding these caveats, however, faculty development must accept the obligations of its vision for higher education and seek to make women as fully a part of academia as it has sought to make itself.

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[1]In selecting women for emphasis, I am not disagreeing with David O. Justice who spoke of a new role for faculty development in the 1980s in the recruitment, promotion, and assistance to tenure of not only women but of minority group faculty members. I concentrate on women only because my own experience at Stanford has been largely with them and has only recently begun with minority faculty. David O. Justice, The Future of Faculty Development, *POD Quarterly* 1 (1979), 40.

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Section II

Intellectual Journeys in Faculty Development

The Scholar-Practitioner Dilemma

Robert J. Menges

Most of us who work in professional development are trained as scholar-practitioners. Like other academics, we were schooled to contribute to a discipline and we were expected (if not formally prepared) to practice the profession of teaching.

All scholar-practitioners feel tensions between those roles. Pressure to be productive scholars may reduce attention to teaching. The immediate demands of teaching may rob time from scholarship.

In professional and faculty development positions, expectations and rewards typically weigh more heavily toward practice than toward scholarship. Despite this dilemma, scholarly work in faculty development does get done, and these papers examine how such work is conceived and executed.

This topic had been a concern of the research committee of the Professional and Organizational Network in Higher Education (POD), especially during Bob Young's chairmanship. At the 1980 POD Conference, I organized a committee-sponsored session entitled "On Doing Intellectual Work: Trials, Tribulations, and Triumphs of Research on Faculty Development." The papers prepared for that session were subsequently revised and this monograph makes them more widely available.

Purpose of These Papers

All of us try to make sense of our experiences and the experience of others. We experiment with alternative conceptualizations; we

make predictions and seek evidence to support or refute those predictions. Some of us do this formally, professionally, and even get paid for the effort.

This intellectual work is usually shared with others only through its results: articles, training materials, and so on. Seldom do we share descriptions of the processes which give birth to those products. In planning these papers, I asked the authors to describe and reflect on the *processes* of their intellectual work, in effect to share their intellectual journeys. I suggested that they comment, among other topics, on the following:

a. What issues do I define as central to my intellectual work and how were they sharpened and elaborated over time?
b. What forces shaped the specific research questions I have pursued? To what extent are these forces intrinsic and to what extent are they extrinsic?
c. What factors governed my choice of procedures for gathering and analyzing data?
d. What are my strategies for soliciting/cajoling/seducing the cooperation of those who provide data for my use, and how do I repay them?
e. What standards of scholarship do I require, given the compromises required by research?
f. How do I attempt to influence other researchers and practitioners with the results of my work?
g. How do I protect time and space for formal intellectual work when there is so much else to do?

The first four papers show that despite differing interests, methods and expectations about how their work influences others, the authors' journeys do have some themes in common. These similarities (as well as some differences) are elaborated in the fifth paper.

I hope readers of these papers will be stimulated to think in new ways about scholarly work in professional development. I hope that interest in *doing* such work will be stimulated as well.

The Contributors

Ronald A. Smith is a member of the Department of Mathematics and Director of Learning Development at Concordia University, Montreal. The major theme of his paper is how his original training in mathematics affected his search for conceptual framework and for research methods appropriate to work in faculty development. His journey led from attempting to "apply the pure," under the influence of his mathematics training, to attempting to "purify the applied," that is, to seek conceptual clarity in the unkept world of practice. He discusses in some detail the search for a "lovable" theory and the research which it produced.

Robert E. Young directs the Office of Instructional Development at the University of North Dakota in Grand Forks. Because he was trained in educational psychology, there is more apparent continuity between preparation and present work for him than for Smith. The linking of theory and behavior became both his own intellectual quest and the problem on which he worked with faculty. To illustrate, he describes research with teachers of composition which focuses on their conceptions about teaching.

Rita Weathersby is currently a faculty member in Wittmore School of Business at the University of New Hampshire in Durham. Her formal faculty development experience comes from a variety of previous positions, and her intellectual work has involved the study of adult development, with special reference to students. Broadly stated, her concern is with how one's conceptions of situations change and how such perspective shifts can be understood and facilitated. By describing several of her research efforts, she shows how her own perspectives have been affected as well as how she facilitated developmental transformations in others.

John D. W. Andrews directs the Teaching Assistant Development Program at the University of California, San Diego. His practitioner skills include not only those of teaching and faculty development but also those of psychotherapy. Consequently, he brings a clinical perspective to bear on his activities. Much of his research is stimulated by his own "Marginality," being professionally at the borders of several worlds of content and practice. How marginality can generate

creative research is well illustrated by his discussion of tension such as that between the experimental and the clinical. A number of his research projects illustrate the effects of tension on problem formulation, research procedures, and the dissemination of findings.

Michael M. Piechowski teaches in the School of Education at Northwestern University. he holds doctorates in both biological science and counseling psychology and pursued a research interest in esthetics. Thus, his expertise spans the physical sciences, the social sciences, and the arts. From that vantage point he traces paths described by the authors and makes some intriguing observations about how their journeys converge and diverge.

Discontinuities Between Preparation and Practice

Piechowski asserts that the four authors are "struggling with tasks for which can be no formal preparation." While I agree with his observation in the large sense, I also believe that there are identifiable skills of research and scholarship likely to be useful in professional development. Few of us, however, have backgrounds which maximize those skills.

What professional developers do amounts to applied behavioral science. Yet those backgrounds in the physical sciences or humanities may lack familiarity with relevant literature and lack facility with appropriate research methods. (Paradoxically, however, they may be open to fresh insights as they "naively" experience this new field.) Those from the behavioral sciences are disadvantaged in a different way if their training has emphasized studies with experimental controls, large numbers, and quantitative analysis. Unfortunately, these features are seldom feasible in the field in the field of professional development. More appropriate are intensive studies of a few cases with qualitative analysis using such tools as field notes, clinical interviews, and systematic observation. Each of these methods is learnable but its mastery requires the expenditure of significant time and energy.

Little is known about how persons in professional development acquire necessary research skills. It may be that under the press of circumstances there is sufficient time and support for adequate train-

ing. The alternative is to improvise (but improvisation quickly exceeds competence) or to cease formal scholarly work (one explanation for the relatively small body of literature produced by the field).

This may be the proper time for a study of the preparation and training needs of those in professional development with special attention to their scholarly role. An examination of the available opportunities for high quality training is also timely.

But for now, we move on with the stories of four persons who, despite quite different preparation, have successfully combined scholarship and practice.

A Mathematician's Journey: From Applying the Pure to Purifying the Applied

Ronald A. Smith

Faculty development, as a relatively new enterprise in higher education, has attracted its practitioners from many different fields. In this paper I review some highlights of my journey from teaching calculus and numerical methods full time in a mathematics department (trying to help students see a wide range of applications of some very abstract theories) to now spending most of my time and energy running a faculty development office and doing research on improving teaching and learning in higher education. I examine some of the paths I traveled from a simple committee assignment to a major interest and motivation to work and do research in faculty development. Reviewing my journey has helped me clarify the research questions I am now asking as well as the methodological issues I am struggling with.

When I became Director of Concordia's Learning Development Office seven years ago I was charged with the responsibility of providing our faculty with whatever services seemed appropriate to assist in improving the quality of teaching and learning. I was mandated to be helpful, to be practical, to be useful. In 1973 there were very few "model" programs to emulate so I was traveling in uncharted territory. I tried to travel two tracks: the "high" road looking for theories, models, and so on, and the "low" road, anything that might work.

I Searched for the Theory

My background and training in mathematics had considerable influence on how I approached this practical task, and even on how I conceive research in this area. My selection and training in mathematics, my major strength, had been based on my ability to do abstract work, to develop complex models and systems of logically coherent propositions and theorems. "Pure" mathematics had undefined terms, postulates, axioms, lemmas and theorems. Application was nice but not necessary! The standard for "truth" was logical consistency and rigor. We even have our own "aesthetics": beautiful proofs, "classical" mathematics, and "modern" mathematics.

Faced with the task of being practical I began, as I would have with any mathematics problem, by searching for relevant theory. What are the basic rules or principles of teaching and learning that I should know and pass on to my colleagues? I was new to this whole area, in fact the area itself was quite new, so I went looking in traditional areas such as education and psychology. With my respect for academia I took a course "Developing, Designing and Evaluating Instructional Systems." Even though I had devoted an enormous amount of time to my subject matter, and even had a year of teacher training, this course introduced me to a "new" and systematic way of thinking about and evaluating teaching. It gave me a powerful heuristic for designing instruction as well as opened up a whole new literature: Davis, Alexander, and Yelon (1974); Diamond et al. (1975); Gagne and Briggs (1979); Mager (1975).

Some Potholes and Detours

Although this path looked very promising at the beginning, I soon discovered some potholes and detours. These techniques didn't seem to address traditional university teaching—most of which was lecture with some discussion. It didn't talk about the problems or potential of teaching and learning in group settings, which was 99.9% of our classrooms. At an even more fundamental level, it offered an attractive basic outline for a design process, without offering much support for the basic decisions that had to be made at each point.

Another path down this road in search of truth in theory led to psychology. Glasser (1976) in "Components of a Psychology of Instruction: Towards a Science of Design" went beyond goals, objectives and methods and introduced cognitive psychology and information processing. Now we were really getting somewhere! Powerful theoretical tools were bearing down on the problems of instruction. But alas, they were far too theoretical to be of much practical use in helping me help faculty teach better.

This "high" road in search of theory seemed to be leading nowhere. Education and psychology seemed to offer little help. Instructional psychology was in its infancy and psychology wasn't offering much help either. McKeachie (1976) in a presidential address to APA was not encouraging:

> The progress we have made in learning and educational psychology is not marked by the dramatic breakthroughs in other areas. Rather what we have learned is that learning is more *complex* than we had earlier believed.

I had been looking for theories of teaching and learning to pass on to my colleagues, who I had assumed were just waiting out there with bated breath. I was shocked on two counts. There were not great truths lying around out there; and even when I found some hint of truth, or some reasonably good working hypothesis to offer, the faculty were certainly not very active listeners. Astin, et al. (1974) seemed to reflect my faculty's attitudes towards teaching and teaching improvement "as so straightforward that it required no special training, and yet so complex and idiosyncratic that mere training could never meet its extraordinary demands."

Is Teaching a Science?

I had come from mathematics with a particular paradigm, a way of solving problems and asking questions, a standard of truth and a model of science. While I hadn't expected to find "mathematical-like" theories, I had expected to find a strongly "scientific" approach. But what type of science? Even in psychology, where I had hoped to find firm ground, if not solid bedrock, the situation was not only "com-

plex," as McKeachie suggested, but even the basic approach was in question. Cronbach (1975) stated:

> Social scientists generally and psychologists in particular, have modeled their work on physical science, aspiring to amass empirical generalizations, to restructure them into general laws, and to weld scattered laws into coherent theory. That lofty aspiration is far from realization.

My basic approach had been severely shaken. Not only had not I found the theories and principles i was looking for, but there was some serious debate as to whether or not they even existed, not to mention the serious debate over how to go about finding "truth." Perhaps I had come from mathematics with the wrong paradigm. I was looking for answers that didn't exist. Even psychology itself seemed confused.

I was beginning to wonder if teaching were more an art than a science. Maybe my faculty were right. Kerlinger (1977) in his presidential address to the American Educational Research Association was emphatic: "actual teaching is partly engineering, partly art. It is certainly not a science. There is no such thing as a science of teaching or a science of education." Fortunately for me, and probably also for the faculty I work with, my journey down the "low" road, that search for anything that might work, was successful. In addition to searching far and wide for truth in theory, I was desperately seeking practical activities to offer the faculty. My faith in the "semi-hard" social sciences was badly shaken. So I now turned to the "super-soft."

Experience: A Better Teacher

I attended two intensive ten-day residential workshops on faculty development. In the first one Bill Bergquist presented, in an experiential format, a very comprehensive approach to faculty development. Several years later Wally Sikes expended and reinforced this approach in a workshop I attended at National Training Labs.

These experiences had significant impact on me. My faith in the "traditional science" approach had left me discouraged, but through these residential workshops I was "born again." I was learning through *methods other than lecture*. Throughout my entire graduate and undergraduate training I had been exposed to only one teaching tech-

nique—lectures—no matter what size the class was. Here I was learning, and learning things that I considered important and significant, but in a very different way. I was learning by experiencing and analyzing my experience. I realized, and really understood in a way much more powerful than any reading could ever have suggested, that there were real alternatives to lectures. There were other methods to use in teaching, and they really worked. There could be more to teaching than telling.

These new methods not only presented alternative ways of teaching, but dramatically altered the criteria I used to measure the success of learning experiences. I set new standards for involvement, for participation and for the types of learning I expected, in both the cognitive and the effective domains.

These experiences together with many similar ones only served to reinforce for me the major limitation I had felt in my tours through instructional design and development. Those approaches were either unwilling or unable to address the real problems and possibilities of people learning in *groups*. They were adequate and even quite powerful at the micro-level, i.e. analyzing and designing instruction (unfortunately too often only in print) for a single learner. When it got to the macro-level (large groups of learners) their procedures seemed to produce experiences which, although certainly better than the traditional lecture, didn't utilize the resources and potential of the group for recreating significant learning opportunities.

I Needed Skills Too

I was stimulated by this new standard for what might be possible in organized group learning experiences, in courses and classes; but I also realized I needed a whole new set of skills I hadn't even considered before. I had been searching for learning theories or teaching theories. But to practice faculty development I needed to improve my skills—my skills to design group experiences, to observe groups, to diagnose, to intervene, etc. I needed to learn more about me and how I worked in groups. And I had to do that before I could ever hope to deliver any significant new messages to the faculty, or even to change my own classes. On my pilgrimage, my search for the "holy Grail," I

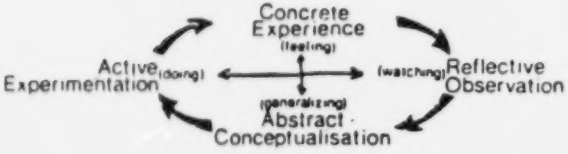
had been converted, almost become "touchy-feelie," I saw new alternatives and potentials for higher education, and all of this was from *experiencing* it, not *reading* about it.

My trip down the path toward the "harder" sciences and theory, psychology, educational psychology, etc., had been less than fruitful. My trip down the "low road" had led me towards practice and several of the "softer sciences", human relations and group dynamics, adult development, organizational change. But no overriding theory or organization seemed to exist which would help me pull all these disparate pieces together into a theoretical whole or even a working model to help my day-to-day practice.

Looking at My Learning

Through my residential experiences I had learned to examine my own experiences much more carefully. Rather than look outside for theories, I began to reflect on my own experience; in particular I looked at how I learn, how I respond in new situations, how I define knowing itself. The work of David Kolb has been particularly helpful in giving me some important insights and understanding of my own learning. In his theory, he has attempted to describe a model of learning from experience. He would argue all learning is experiential (Kolb & Fry, 1975).

His model suggests that learning involves a tension between Action and Reflection, between the Concrete and the Abstract. He suggests that productive learning, that is, learning that produces growth and change, involves all four abilities, Everyone uses all four to some degree; but we do have preferences, or preferred ways of responding, to situation, Even though it looks like a circle we don't always have to go around it, nor do we always start in the same place. Since we are making choices on each of the two dimensions we are usually functioning in one of the quadrants. Disciplines, or specialties within disciplines, require and reinforce certain kinds of behavior or activity or quadrants.



My New Perspective

This model helped me in several ways which are relevant to this paper. While I had realized, or at least said I realized, that people as well as disciplines were different, during an intensive workshop with Kolb, this point was really brought home to me. Everyone in attendance wanted to *know* more about Kolb's theory, but there was a real division in the group. Some people were clamoring for more time to consider and explore applications: they defined knowing— "I *know* it when I can *do* it, use it, apply it." Another group was clamoring for more theory, how does this relate to other ideas—they defined knowing differently—"I *know* it when I *understand* it"—when the ideas are clear and logically related. For perhaps the first time I really appreciated the differences between people. Everyone there was articulate and vocal in saying "I want to know"; but they wanted very different things.

When I say I want to know more about teaching or teaching improvement I probably mean something quite different from many of you who are reading this paper. When faculty say they want to know more about teaching, or more often that there isn't anything to know, what do they mean?

I was becoming much more tolerant of differences. I have a deep concern for teaching, and probably even some skill at it (I really think that is why I have this position in Learning Development). I had originally considered my colleagues who appeared to have less interest or inclination towards teaching to somehow be unenlightened or

misdirected. At best they didn't know better, and my truth would set them free; and at worst they didn't care, and student evaluations and the reward system would straighten them out.

I had a greater tolerance for and appreciation of the differences in my colleague's perception of and attitude toward teaching. I had lost a lot of my crusader's real. I had not found the truth, but I had learned from examining my own experience. I had more respect for and interest in my colleague's attitudes and perceptions. Perhaps I was only adjusting my expectations and practice to be in line with my potential and promise, but I felt better and even more energetic.

My natural inclination, as well as my training, had been very heavy on the abstract and reflection sides of Kolb. When I was faced with a practical question I naturally went in search of theory. This search had led me down many different roads into new disciplines with very different standards for "proof," explanation, and theory. While each of these areas had strong "ad hoc" potential for particular questions, I needed some overriding model or theory which would help me to understand, in Kolb's reflective/abstract sense, my work with faculty, and their response (or lack of it) to teaching improvement efforts.

A Really Good Problem

I was becoming very involved in this activity. What began as the chairmanship of a committee and then the Directorship of an Office was beginning to consume almost all of my time. I had become fascinated and intrigued by this area and was interested in pursuing it more seriously, to "research" it. I had a background and perspective which was different from many of the people working in the area. I felt I had some important questions worth asking and answering. I was in the middle of a career transition.

My own search for a theory which would help me make sense of my work with faculty had indicated a wide range of approaches with no overriding view which could help in my day-to-day practice. It was not only the faculty developers who seemed to lack "theories" of teaching improvement. Individual faculty member's theories of teaching or models to inspire their practice, seemed in an even sorrier state.

Freedman (1979) reporting on extensive interviews with faculty stated:

> Very few faculty members can define the basis on which they evaluate themselves or can offer any rationale for what they do in the classroom. It is apparent that most of them carry on in the way they learned as students. Not only does traditional academic culture ignore basic education issues, it does not even possess the concepts necessary to address them. With no concepts for describing student development, without means to evaluate one's teaching, without even a perspective from which the student may be seen as a person, the professor is denied the most elementary satisfaction of professional activity—seeing desirable things happen as a result of planned action.

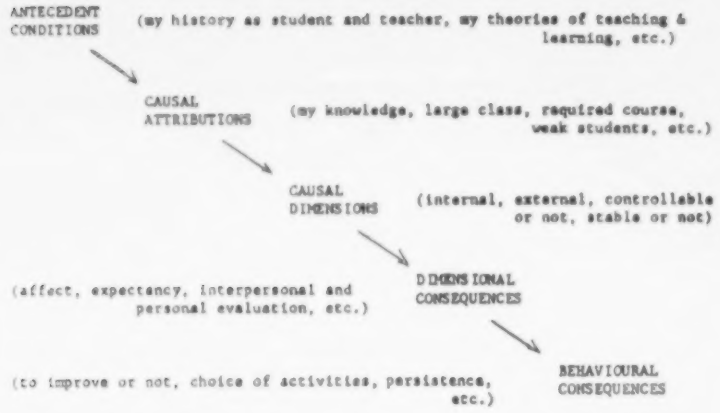
The major question or central theme underlying my intellectual work, as well as my daily practice, is to increase my understanding of how professors and faculty developers think about teaching and teaching improvement. For example, why do so few faculty members, rarely more than 20%, respond to the best improvement programs we can plan and offer?

I was depressed by the overwhelming number of models, approaches, and perspectives. I was looking for a theoretical framework which would help me make sense out of all these various theories (integrate them in some way) as well as give me leverage on understanding my work with individuals. Young (1979) suggested a model of faculty behavior, learning and development which might help organize theory and research for faculty development. I would like to suggest another which I have been working on.

A Lovable Theory at Last

With a lead from Wittrock and Lumsdaine (1977) I found attribution theory, Weiner (1976, 1979, 1980). As one who cherishes and craves theory this seemed like a truly "lovable theory." It was certainly rich, incorporating thinking and feeling, motivation and behavior, and it left room to include a whole host of "antecedent conditions".

Although it wasn't written about teaching and learning, I could easily make the translation. Basically it suggested that, as a result of my past history both as a student and a teacher, any implicit or explicit


ANTECEDENT CONDITIONS
(my history as student and teacher, my theories of teaching & learning, etc.)
CAUSAL ATTRIBUTIONS
(my knowledge, large class, required course, weak students, etc.)
CAUSAL DIMENSIONS
(internal, external, controllable or not, stable or not)
DIMENSIONAL CONSEQUENCES
(affect, expectancy, interpersonal and personal evaluation, etc.)
BEHAVIOURAL CONSEQUENCES
(to improve or not, choice of activities, persistence, etc.)

theories of teaching or learning I might hold, and specific cues from a particular class, I would judge that class to be successful or not; and then I would make (again perhaps not explicitly) attributions as to the causes of that outcome. Underlying those attributions are at least three dimensions: locus (internal or external), control (controllable or uncontrollable), and stability (stable or unstable). These dimensions have consequences in the are of affect, expectancy, interpersonal and personal evaluation, which in turn affect my behavior.

I don't want to discuss the model in any more detail here, but I want to highlight several important points about attribution as a theory. First, it is broad enough to incorporate different theories of teaching and learning. It allows room for personal perceptions, and idiosyncratic values, beliefs or assumptions. It attempts to explain behavior in terms of an individual's own perceptions of the situation and his "theories in use" (Argyris & Schon, 1974).

It is a theory of behavior which incorporates feeling, thinking and motivation. It is in a language simple enough to be the basis of communication with faculty.

It can be applied at many levels: students' attributions about their learning, professors' attributions about their teaching, professors' attributions about their careers, instruction/faculty developers' attributions about faculty or teaching.

What had begun as a search for some specific theory to help teachers improve teaching or at least to help me help teachers improve teaching has resulted in my finding a broad theory which is rich enough to help me understand, or at least ask more intelligent questions, about my work with faculty. I had not originally conceived of my faculty development job as an "intellectual" activity. I had seen myself more as a clearing house of information, a dispenser of "truths" about teaching. As I got more into the job I became both confused and intrigued. Making sense for myself, (which no doubt will help my practice) and contributing to a better understanding of, or even a "solution to this problem" appealed to me inherently. Mathematicians love problems!

Even to call it a problem may only reflect the view of the faculty developer who has too few clients or "converts." I have been impressed that many intelligent and thoughtful faculty have often ignored, and even sometimes actively scorned, our best efforts to evaluate and improve university teaching and learning. If it is a problem it may be ours, not theirs.

Does the Model Fit the Facts?

I had my model or theory which helped me make sense out of what I was experiencing. It suggested reasonable hypotheses to explain faculty members' reactions to evaluation of teaching and teaching improvement efforts. Just having the model would have been enough for the mathematician side of me. But if I wanted to test the fit of my model to the facts I was going to have to do a whole lot more work. People in this "new area" seemed to demand more than "good logic and plausible hypotheses."

Here again I was on new ground. I was out of my element in research methodology in this area. My first inclination would have been to develop some tidy questionnaire and then "number crunch" the results to find some generalizable results. I have not followed that path because I don't feel our knowledge in this area, our appreciation of all the subtleties and fine points, is sophisticated enough to make this technique fruitful.

I have been gradually finding support (among the "experts") for what I intuitively sensed was a better way to go. Cronbach (1975) suggested "instead of making generalization the ruling consideration in our research, we reserve our priorities." As we go from situation, to situation, our

> first task is to describe and interpret the effect anew in each locale, perhaps taking into account factors unique to that locale or series of events. As results accumulate, a person who seeks understanding will do his best to trace how the uncontrolled factors could have caused local departures from the model effect. That is, generalization comes late, and the exception is taken as seriously as the rule.

I believed we needed to study individual cases in much greater depth but I was still concerned about generalizations, the old security blanket from my mathematician days. Stake (1978) helped me along when he explained that disadvantages of case studies disappear "when the aims are understanding, extensions of experience and increases in conviction in that which is known." He goes on to say:

> What becomes useful understanding is a full and thorough knowledge of the particular, recognizing it also in new and foreign contexts. That knowledge is a form of generalization too, not scientific induction, but *naturalistic generalization*, arrived at by recognizing the similarities of objects and issues in and out of context by sensing the natural covariations of happenings. To generalize this way is to be both intuitive and empirical.

So I could have my understanding and maybe even my generalizations too. In my job whose prime purpose was to be practical, but with a depth of understanding, I would have to reconsider general laws Stake wrote:

> It is the legitimate aim of many scholarly studies to discover or validate laws. But the aim of the practical arts is to get things done. The better generalizations often are those more parochial, those more personal. In fields such as education and social work, where few laws have been validated and where inquiry can be directed toward gathering information that has use other than for the cultivation of laws. A persistent attention to laws is pedantic.

I am now off on an intensive study of faculty and their views of teaching and teaching improvement. I use in-depth interviews with faculty, some lasting up to three hours. This method produces incredibly rich data which is often complex, confusing, sometimes contradictory, and almost exhausting to analyze.

I am still troubled by the nature of self-report data and am following with interest the debate in the psychological journals (Nisbett & Wilson, 1977; Ericson & Simon, 1980). My pilgrimage in search of truth always seems to lead me to more and more complex questions. Just another good problem for an old mathematician!

My Research and Practice Married

What I have described as two separate roads are now closely intertwined. My interviews with faculty not only help my developing research interests but also serve as powerful intervention on our campus. Part of my responsibility is to increase faculty concern for the quality of teaching and learning at Concordia. My interviews encourage and stimulate faculty to think about their teaching practice while at the same time provide research data.

I don't think any of my faculty colleagues consider themselves research subjects at all. I am investigating a complex phenomenon, asking interesting questions, and I want and need their help.

I have rarely found faculty who are not eager to talk about the nature of their work. In fact, they seem flattered to have been asked, to be respected for their perceptions, insights and knowledge. We have interesting conversations which are rewarding in and of themselves.

One of my major problems is time. Not surprisingly, that is the problem most often mentioned by faculty. Fortunately, my area of research closely overlaps and intersects with my daily work; and in that way I am able to think about my work when I am researching, do research when I am meeting with faculty and running workshops, and go to professional meetings like POD to talk about my work and my research at the same time.

My journey from full-time mathematics to faculty development had led me to visit many different areas, changed the nature of the "truth" I was seeking and even the very methods I was using. Even if

I never complete this career transition or never finish my journey in search of "purifying faculty development" I must admit that getting here has profoundly changed my conception of teaching and learning, improved my own classes dramatically, and been both stimulating and enjoyable.

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Tanning My Hide With Research

Robert E. Young

My intellectual work has important consequences for me and for those with whom I ply my trade of faculty development. The time seems right to stop and discern those consequences, not because I have great wisdom to share but because such an exercise provides a glimpse of one mortal trying to integrate intellectual work into day-to-day professional life.

The title of this paper suggests a double metaphor and a theme which emerges when I think about my intellectual work. I recently returned to the Upper Midwest of my upbringing, and the ways and the words of a strict and agrarian people. The "tanning of hides" in this experience means two quite different, yet salient, things. First, it means the turning of a raw product into a functional and even elegant material. A cowhide is not useless in its untanned form, but with refinement it uses multiply and its value increases. It has worked the same way for me as a faculty developer. The values, knowledge, and skills I bring to my work have use, just like that cowhide. But my intellectual activities — my research and my writing — give a suppleness and attractiveness which I believe enhances my value. I may not be like fine leather, but I can now cover deeper contours on the body Academe. I find I'm more resilient in the bad weather that is sometimes our work, and I certainly must smell better to some colleagues than if I did not have some sort of intellectual work underway.

The other meaning of my title suggests a second reality in my intellectual work, although it raises less positive memories of my

childhood. When I disobeyed my mother or father or when I got into some unforgivable mischief, my father would "tan my hide." That is the way he would put it. As a psychologist I eventually came to call this an aversive stimulus, but then it was simply a sore fanny and usually a lot of tears. Well, research and writing have had these consequences also, and I describe some of the negative effects in greater detail below. My intellectual work — and the ways I have gone about it as a faculty developer — have caused me and others embarrassment, worked against other development activities, and even caused me physical pain and tears of sadness.

Now let me be more specific by commenting on topics common to all authors of these papers.

Some Central Intellectual Issues

One overarching issue has predominated: the thinking and behavior of college teachers, as these wholly human activities affect what one does in teaching. I am interested in students, methods, materials, teacher-student interaction, and institutions as they influence the teacher and as the teacher influences them.

How did I arrive at this focus for my research and writing? First, I should say that I have not been at it very long; the sharpening and elaborating process has not had much of a chance to do its good. But I can identify an intellectual legacy and sketch a pathway to my present interests and perspectives.

My academic preparation accounts for much of my view of the world. And most important in that preparation as an educational psychologist, I believe, was the luck of growing up intellectually and professionally in a milieu of varied and often competing theoretical positions and empirical interests. I am speaking of my academic department, one small wing of a building where offices all face out into a room that became a melting pot of academic and personal interactions. Don't get me wrong; some of these people never spoke to each other, but their ideas found ways of seeping under even the most tightly closed doors. And for those of us who spent much of our lives in the room, the effect was undeniable.

My advisor was a behaviorist, but a very special kind, one who allowed that other things besides contingencies of reinforcement affect behavior. Next door to him was a person committed to the idea that social structures — classrooms, schools, educational systems — have a predominant effect on thought and behavior. Then on the other side of the entryway camped a leading humanistic writer! He was a true believer in the importance of emotion and self-esteem for learning and teaching. Finally, dead across the room, over a couple of secretaries' desks and behind a four-drawer file cabinet, was the office of the smartest person I will ever know. He, in addition to providing a daily dose of awe, gave us an up-to-the-minute, play-by-play account of the cognitive movement in the social sciences, psychology, and education.

I have gone on at some length about these people and their setting, but I do not think I overstate this influence on my intellectual work, and, in particular, the issues I find most important. My education in this way provided the foundation for what would happen in my intellectual outlook.

Near the end of my graduate training I was confronted with an idea which has very much taken hold of me and my intellectual work. That idea goes something like this: to understand human behavior, you have to use all the perspectives I had learned about on the third floor of Erickson Hall — and more. You have to integrate them into your soul, as well as into your experiments, if you are to have an understanding that would be worthwhile. Even more strongly stated — and this phrase buzzes in my head — to truly understand something like the thinking or behaving of a human being you have to look at everything and all at once. The behaviorist, cognitivist, humanist, or the other "ists" look at only part of what is going on and look only at certain times. The point is that all are necessary but none is sufficient. I had to find a way to use each, at the same time, in my work. Or so it seemed.

At just about that time another propitious thing happened. The emphasis among educational psychologists — at least the AERA variety — swung significantly away from research on learning and toward research on *teaching* and *teachers*. Two pieces of this movement added to my intellectual journey. First, the National Institute of Education conducted a National Conference on Studies in Teaching,

which consisted of a number of study panels intended to identify the domain of issues in the study of teaching. The composition of the panels acknowledged right off that this research held a variety of different perspectives, theories, and methods; separate panels dealt with Teaching as Human Interaction, Teaching as Behavior Analysis, Teaching as Skilled Performance, Teaching as a Linguistic Process in a Cultural Setting, Teaching as Clinical Information Processing. This reinforced my graduate school experience. But now I was looking for linkages, a way of using different perspectives simultaneously and as luck would have it again, I found just such a way. In the work of one of the panels, the last one (National Conference on Studies in Teaching, 1975) a model popped out that gave me a crude way of thinking about teaching and the thought and behavior of teachers in a somewhat complete and unified fashion — a fashion which the activity under study deserved. The chair person of the panel would eventually go on and found an institute for the study of teaching based largely on this way of viewing teaching. And my following of the institute's activities would become an important impetus to my intellectual work. It probably did not hurt, also, that his person was that very same professor behind the four-drawer filing cabinet.

Just one final event needs to be mentioned for the yellow brick road to my intellectual interests in faculty development to become complete (at least until the new four-lane section to North Dakota is begun). With a degree, an idea, a model — and a new suit of clothes — I took off to my place in Academe. But as soon as I arrived I found I could no longer just learn myself, I had to help others do the same. Specifically, I had to teach people about human thinking and behavior (in educational psychology courses). Courses like that cover a vast array of material, from theories of human development to pointers for classroom tests. The task of pulling together that material in a way that students might find meaningful quite frankly stumped me. But once more I lucked out. I chose a textbook, authored by an eminent educational psychologist (Cronbach, 1977), in which he picked up on that same idea I had found a year or so before: thinking and behavior must be considered in an integrated way. He even presented a model which depicted learning in a way analogous to the new way of viewing

teaching behavior. Now I was excited; in fact I was so inspired that I adapted a model of my own, and I built my courses around it.

And, as it would turn out, my research and writing about college teachers in turn has found this way of thinking about human thought an behavior at its core. It only required one more twist, which cause, like the others, unexpectedly. I asked my students on a final exam to use my model to explain one episode of learning. I expected that each class member would choose a student whose learning they had observed. All did just that but one student. She used my model to illustrate her own thinking and behavior as a teacher. I was astounded, first by the independence of this student, but then by the substance of her paper. I had a model of my own to pursue the thing about which I was most interested — teaching and teacher. And, in this model I had a way of thinking about learning *and* teaching that was continuous. These things had occurred to me before, but my student's act jarred me past my reservations. Also, I now had someone — she was a graduate student — to talk with about my interests and the approach that had come, by the route I've just described, to make so much sense to me.

Some Specific Research Questions

It should be remembered that at the time my intellectual work began in some earnest I was already working full time in faculty development, particularly in trying to help people provide effective instruction. And I was taking a particular approach to that task, an approach which I called "course planning." In this approach I was influenced by the paradigms of instructional psychology and instructional technology, i.e., the importance of specifying objectives, methods, and testing in some sequential and systematic way. The approach worked pretty well; most people seemed happy, and courses and even student achievement began to change for the better.

But then I started paying attention to some of the "noise" in my system. For example, not everyone produced the same type of objectives, some people ignored advice about proper strategies, other instructors had a hard time seeing a relationship between testing and instructional intent. Also, I began to notice some challenges to the very

assumptions and theories behind the approach. It was one of these challenges in particular, by a professor of English, that pushed me along in my intellectual work. I decided right then that I wanted to do some research and writing. I decided I wanted to ask "What affects faculty members' thinking and behavior in the context of their teaching? Why do they do what they do?" The questions were quite general, but they were a place to start. And they motivated me so much because they had grown out of my faculty development work, and I saw prospects that answers would pay off for me in that work.

I had some background for the intellectual work I wanted to pursue. At the point of my doctoral dissertation, I was beginning to get involved in the faculty/instructional development business, and I was concerned about the motivation of faculty members to get involved in instructional improvement activities (so were a lot of other people at that time). I asked "What factors would contribute to a university faculty member's decision to participate in instructional improvement activities?" And I did a study which was broadly based in its intellectual outlook; it reflected some of the influence I described above. But it lacked an overriding concept of human behavior and thought to guide it.

So with the intellectual seasoning I have described, and the day-to-day experience to build from and to look forward to enhancing with my research, I set off. First I wanted to do a review of the field, to update and improve the thinking I did in my thesis. It was at that point that I first used in my study of teaching the model of human thinking and behavior which I had developed for myself. I used it to organize the existing theory and research which related to my questions of faculty thought and behavior in teaching, and to identify areas and more specific questions for empirical research. The result was a paper titled "What Do We Know About Faculty?" published in the *POD Quarterly* (Young, 1979).

At about the same time, I began to be impressed by the issue of *context* in human thinking and behavior. There was underway a general movement in social science emphasizing the influence of the situation in which phenomena, such as language, took place. Anthropologists led the way, with cognitive psychologists right behind. A paper titled "The Psychology of School Subjects" (Shulman, 1974)

influenced me greatly. It occurred to me that maybe I should focus my look at teachers' thinking and behavior in a particular context, such as one discipline. Two of the people who had challenged me the most, as I made my decision to do some research, were teachers of English composition. So after some discussion, which I'll describe below, I decided to focus on one subject taught at one level: the teaching of freshman-level writing. Thus my research questions were shaped further.

This decision, in addition to narrowing the focus of the research, had another consequence. It created a collaborative project. The intellectual work, at least around the questions about the teaching of freshman composition, no longer was just mine. Now two professors of English, an educational researcher committed to a contextual approach, a cognitive anthropologist, and my graduate students all coalesced around the project. And, this in turn further influenced the nature of the questions we would pursue.

As the leader, my interest in thinking and behaving in the context of teaching served as a focal point. But two things happened. First, members of this new research group had their own special interests. For example, one English professor was primarily concerned with the question "How do you change the thinking and behavior of composition teachers?" She wanted an immediate and direct application to faculty development. The anthropologist, on the other hand, was most interested in classroom interaction and effect on students.

The other thing that was at work to shape our research questions was a desire to move quickly toward empirical work. Each of us, but the four professors particularly, felt some pressure to turn this interest and activity into some publishable results. So without much discussion we moved ahead at my suggestion to do a study which focused on a certain aspect of teacher thinking: The conceptions which teachers of composition hold about what they do in their teaching.

Research Methods

Ethnographic methods have loosely guided this investigation of teachers' conceptions of composition. (I will limit myself to talking about just that study in the rest of this paper.) I began with a methodo-

logical premise, or I should say one evolved as I conceptualized the research I wanted to undertake and began to interact with my collaborators. The premise suggested that looking more deeply into a few cases is more productive than studying many cases superficially. Due to many of the influences already described I have come to believe that to understand something very well, like college teaching or college teachers, you must study it in all its complexity. The only way to identify all relevant variables and observe their interrelationships is to study a few cases over a long period of time, in depth, and from a number of different perspectives. The emphasis should be on validity, not reliability, at least in the stage we find ourselves in the study of college teachers. So the procedures that would govern our research into teachers' thought and behavior, and particular teachers' conceptions, would first gather insights from a few cases and then test them with progressively larger and more diverse samples.

In addition to this premise, three other things influenced our choice of methodology. First, research on composition was becoming more quantitative in its orientation. So we thought more qualitative methods would help us achieve some distinctiveness in this field of research. Also we believed, quite nobly, that we might be able to check what our English professors saw as an overquantification of the inquiry into composition.

Secondly, qualitative methods fit the epistemological values and training of the group better than did more experimental methods. My own background, in addition to educational psychology, rested in philosophy and sociology. And as I have mentioned, both the educational research professor and the anthropologist were committed to qualitative and descriptive methods. And the English professors, with training in literary criticism, found interviewing, observing, content analysis, and other more qualitative approaches more to their liking.

Finally, we figured out quite early that these methods would allow us a "two birds with one stone" approach in our research. I, and one of the English professors, had a hope that we could find a way to do research that had direct faculty development payoffs. Interviewing and observing, we surmised, might fulfill that hope. And, as I will describe below, we were very right.

So in our first study, interviewing became our primary data-gathering tool and the logical analysis of interview content became our way of determining results. Both the methods we used and the results of this first study are reported in "Teachers' Conceptions of Composition," a paper yet unpublished.

Negotiating with Participants

Once I decided to study composition, I knew I had to touch base with those people who had some stake in a study of composition at my institution: the Dean of Arts & Sciences, the English Chairman, the Director of Composition, and certain senior faculty members in the English Department. They would make it possible or not for subjects to work with me. They could simply prevent me from doing the interviews we had planned, or they could make it difficult for those who would cooperate. Since the two English-professor members of my research team were junior members of their department, their realistic participation depended on the good will of the department toward the project. I did the base-touching, and found that the teaching of composition was a sensitive subject. All agreed to the project, though under the condition that I check regularly with the composition director.

This research, and our approach, became touchy for another reason. We were in effect moving in on the department's research territory. Although not much was going on in research in this area, the composition director in particular felt this was an area of his expertise and interest. That made it difficult at times for me as an outsider and for his junior colleagues whose work on this project threatened to surpass his own.

My strategy was two-fold. First, I asked respected senior members of the department to be the subjects of the study, including the composition director. Secondly, I joined the department's composition committee and provided them assistance in a variety of projects over two years. This act was crucial in my opinion; it demonstrated a more than superficial interest in the teaching of composition and a longer and broader commitment than just one study.

Rewards to participants were equally complicated. As repayment, I offered my subjects a workable arrangement for the interviews and feedback not only at the end but after each interview. I also offered, only half-facetiously, to make them famous through the publication of interview material. Each of these had incentive value for the various subjects; together they garnered sufficient motivation to start and continue the study. In fact (and we know a reinforcer is something that in fact reinforces) the sessions were stimulating both to subjects and interviewer, feedback was judged useful, and fame was felt in a tiny way by the person to whom we referred in our papers at three national conferences as Professor G.

In summary, I could say that the strategies that paid off most were developing good personal relationships and showing involvement of the researchers in the daily concerns of the subjects, in this case the teaching of freshman composition.

Two failures in providing reward should be mentioned. First, we gave insufficient feedback. Here we did not deliver all that we had promised; a grave error in any endeavor. The press of other activities (the bane of doing satisfactory intellectual work while in a professional position) caused us not to analyze the interview and give feedback to all our participants. We shared with them bits and pieces and all of our papers. But the assistance that we had promised — and our opportunity to use this research as faculty development in itself — fell short. Second, there were negative payoffs in the visibility of our participants among their departments' colleagues. Visibility outside of the English Department worked well. Our interviewees were pleased for us to use them (appropriately pseudonymed) as examples at national meetings and in my own work on campus with faculty members from other departments. But with the department our papers and a colloquia built around our data and analyses provided too much exposure, given a certain competitiveness and contentiousness among the members.

Standards of Quality

I am afraid always that my standards are not very high, or at least that they are overly pragmatic. I am concerned about reliability and validity of data, soundness of deductions and inferences, and clarity

of results. On the first two issues I do not always measure up the way I want. Here is where time and expertise for intellectual work pay off. On the last issue, I do much better. Let me say a few words about all these issues.

Two biases allow me to live with compromise. First, I believe that all data are useful, if only for their value in giving us "hunches" about the nature of the phenomenon we happen to be studying. I feel that our present knowledge of teachers is limited, so even limited data and analysis can be useful if cautiously and judiciously used. Second, I believe that practitioners, who are usually not highly trained in research, have something important to contribute. So, the research of practitioners, despite technical limitations, should have a value and a place in any realm of inquiry.

On the clarity of results and the use of results, I have less justification for compromise. This aspect of intellectual work is the most important for someone involved in faculty development. We are in the business of stimulating change, and the results of our intellectual work can be among our most important tools in that business. So not only must papers be well written, but also their placement, presentation, and use must be carefully planned. Also, other ways of reporting results need to be used. In our composition project, we have produced three papers, organized several colloquia, peddled results informally, and used data and analysis in consultations with participants.

A final standards issue has to do directly with publication. As I have mentioned, our work has been presented at a variety of national meetings, but it has not yet found its way into publication. Frankly by standards of most journals, it is not ready, and time is limited to do additional research, analysis, and writing to get it into that form. We have been satisfied to a point with our audience and impacts, especially on our own campus. But we all feel the need to have more influence and to get into print.

Wider Influence

I try to build that influence into the design and overall strategy of my research. I try not to set my target for influence too broadly. And, I try to involve other researchers and practitioners as early as possible

in the intellectual work which I have underway. Because context seems so important and because ownership has a lot to do with eventual acceptance, I set my sights on influencing smaller rather than larger groups. In the case of our composition research we hoped first to influence the subjects of our interviews, then others who taught composition in their department, and only in some more general way audiences beyond our institution. We did present papers at national conferences, and we did hope to influence practitioners and researchers at these meetings but our expectations were not very high.

The collaborative approach we used also had an effect on our group members, in terms of their own intellectual outlooks, their interests in research, and their morale as researchers — and, in the case of our English professors, as teachers of composition.

Getting Everything Done

I should say right off that I do not do a very good job of getting everything done. A good example is the most immediate one: this paper. I prepared the first draft well past my deadline and only in the cracks of my day of administering an instructional development program.

This situation poses a real dilemma, one that is felt deeply and more and more constantly. I need to do intellectual work, in fact I have three needs. First, active inquiry provides me with information important to me in my job. Second, research, and writing play an essential part in my career goals. And finally, I find that I am not either intellectually or personally satisfied unless I have some intellectual work going on — even minimally at all times. But alas, there simply is not enough time to do it as well as I would like to do it.

My satisfaction rests, though, with the sense that the intellectual work I do complete has an effect on my practice and that my practice has an effect on my intellectual work. And that is what I'm really interested in doing: keeping myself a whole and well-integrated person, my hide well tanned. As a professional educator, a faculty developer to be specific, I must be both a person of action and a person of reflection.

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On Doing Intellectual Work: Grasping the Power of the Gestalt

Rita Weathersby

All of us do intellectual work as part of the common process of making sense of our experience. We set forth ideas, attempt to verify and extend them, and experiment with alternative conceptualizations. Inevitably we create a frame of reference which provides a context for what we say and which gives grounds for judging its validity. It is this process of context setting that seems most crucial to me, given my approach to intellectual work and to joining the worlds of contemplation and action.

I am a professor, not a faculty developer. Yet I am inescapably a faculty developer because the crux of my profession is fostering beneficial changes in others — in managers, in situations, and in students. I have focused my recent work on adult development, and on the potential for creating transformative organizational environments. This frame of reference has become my context for interpreting events; for example, when I evaluate a college's responsiveness to adult students or a company's responsibility for the career development of its employees. My work is synthetic and theoretical, yet also immediately practical because an understanding of developmental processes guides my day-to-day decisions.

Overall, I've come to envision my central task as that of enabling myself and others to grasp the power of a transformative gestalt, a way of "seeing" a situation differently and more adequately. The corollary

task is to act more effectively from that changed perspective. Thus, my role as a scholar is no different from my roles as teacher or organizational consultant. The heart of the task lies in working with my own and others' processes of experiencing and of fostering qualitative shifts in how sense is made of that experience.

A Transformative Gestalt

It's not surprising, as I reflect on it, that transformation is my central issue and that I am searching intuitively for patterns to explain my own and others' experience. I am a divergent thinker whose strengths are the ability to see multiple perspectives, to grasp issues imaginatively and intuitively, to embrace emotion and concretences, and to stand back and look again, hopefully "seeing" more than others see. In my fondest fantasies I envision myself as an artist or magician seizing the power of an inward perceptual thread to transform outer reality. I am drawn to theories of transformation. I am fascinated with learning methodologies that purport to change people's perspectives. I have experienced perspective shifts, the embracing of developmental tasks, and the powerful impact of group processes and personal learning methodologies. I have found relationships and environments that fostered my own development and those that hindered it. I choose to spend my time and energy in activities that create the potential for "significant learning", to use Carl Roger's phrase, in myself and society. That is the core of my intellectual work. In sum, that *is* my work.

If my major interest is in developmental transformation, corollary interests are promoting perceptual complexity and cultivating the skill of moving from complex perceptions to actions informed by that complexity. I think of this as developmental complexity because greater awareness, differentiated and reintegrated at higher levels, characterizes state theories of adult development (Bartunek, Gordon, & Weathersby, 1980a; Kchlberg & Mayer, 1972; Loevinger & Redmore, 1970; Loevinger, 1976) and also characterizes applications of gestalt psychology to individual and organizational change (Polster & Polster, 1973). I have tended to focus on the possibility of personal change in institutional contexts. But, I am after the gestalt here, and

in the foreground is developmental transformation, a qualitative shift in perspective, supported by cultivating and articulating the experiencing process. That "experiencing process" can belong to an individual, a group, or an institution. The pressing questions for me, at this moment, lie in identifying the stages, patterns, structures and pathways of growth that enable us to cope with change and to transform our environments. For example, what are the characteristics of organizational environments that support self-actualization for individuals? How can we enable individuals and institutions to become who they best are in a complex and constantly changing world?

What Led Me to These Questions

These questions are the result of a career spanning fifteen years and twelve institutions. I have moved from educational research and development, to program administration at the federal level, to group training and counseling, to consultant work with academic institutions around issues of adult learning and professional education, to college teaching and my present position in the organizational behavior group at the University of New Hampshire. My career continues to require constant changes of perspective.

The forces shaping my work are both intrinsic and extrinsic. Extrinsically, there are interesting job opportunities and worthwhile institutional concerns. For example, developing materials for teachers' classroom behavior (at the Far West Laboratory for Educational Research and Development in San Francisco); institutionalizing competency-based standards for training and assessment of child care professionals (at the Office of Child Development/DHEW in Washington, D.C.) which, in effect, created a new professional role; facilitating academic planning for a newly-established graduate school of psychology dedicated to creating new options and roles for mental health professionals (at the Massachusetts School for Professional Psychology); or consulting with a national network of higher education institutions about adult development and program design (sponsored by the Fund for the Improvement for Postsecondary Education). Whatever the context and immediate task, however, the core of the work that invariably excites me is implementing a new vision. Invari-

ably, I am involved with efforts to change people and institutions. Usually, I am seeking ways to articulate and implement changes of perspective. The components of the change are definitions of purpose, tasks and roles, and enlarged perceptions of what is worth noticing and responding to in a situation.

Research as Perspective Transformation

Research for me involves enlarging a process of personal search and also search for a transformational idea or context. Let me give several examples.

At Wheelock College in Boston, I had the opportunity to compare adults' abilities to perceive themselves as self-directed learners with their skill in responding to individual differences and the developmental needs of young children. The adults were enrolled in an innovative competency-based child care staff training program. The opportunity and interest grew out of my experience inaugurating the program from the federal level. The research was shaped by my conviction that adults could best respond to developmental differences in young children if they could perceive *themselves* developmentally and could articulate their own processes of learning.

Formulating the research in this way was an important shift in perspective. At that time I was vitally concerned with self-directed learning in my own life. What I did in this study was shaped by real interest, by asking myself what I really wanted to know for myself that might have profound implications also for others. The results confirmed my conviction and had some immediate implications for the design and eventual effectiveness of the program. However, the power here is in the gestalt — the idea itself: the necessity for adults to have complex and differentiated perceptions of themselves and their learning processes if they are to create any fundamental changes in institutions. Another study of the same program, this one from an institutional and policy perspective (Weathersby, 1974) focused on the idea of this new professional role and the possibility of institutionalizing it.

A study more relevant to faculty development efforts is my study of students in the Adult Degree Program of Goddard College. In a

previous review of the literature (Weathersby, 1977), I placed individuals in the three developmental sequences of that framework—life cycle stages, structural developmental stages, and learning style. I then investigated how each dimension of development shaped a student's perceptions of the program, reasons for attending, and awareness of using education to support a life transition or personal growth.

The intrinsic reasons for the study were compelling. I was fascinated by life span psychology applied to adults: by the work of Daniel Levinson (1978), Roger Gould (1978), and George Vaillant (1977) in tracing successive issues and developmental tasks of the life cycle, by Jane Loevinger's (Loevinger & Redmore, 1970; Loevinger, 1976) description of stages of ego development, and by William Perry's (1970; 1981) scheme tracing students' responses to a college environment in their intellectual progress from dualism to multiciplicity and relative thinking. I *knew* that graduate study had changed my own inner life, and I understood it in the context of these developmental theories. I wanted to articulate this process for others. Extrinsically, no one had this kind of data on adult students. And, more importantly, I had a collaborator in Jill Mattuck Tarule, at that time a faculty member in the program. She used some of the same data in conjunction with clinical interviews to outline steps in a process of inner transformation that enabled movement within and across the stages (Tarule, 1980).

The results of my study showed clearly the effect of an individual's place in these developmental sequences in determining *what* is learned, *how*, and *what meaning* is assigned to it. Subsequent articles have elaborated these results, suggesting implications for higher education (Weathersby 1980, 1981; Weathersby & Tarule, 1980). What I personally value about this work is the context form which my research questions arose — the assumption, now validated, that an individual's capacity for transformational learning is shaped by the developmental sequences of adulthood; and that an educational institution can play a facilitative role in what I would call life transitions and developmental change.

My work in adult development led to a three-year consultancy with a national network of adult projects funded by the Fund for the Improvement of Postsecondary Education. Here the emphasis was on

refining the dialogue among informed practitioners and articulating useful constructs to connect research and theory about adults with program design. This was a multi-institutional network, with individuals joining and leaving at various points. The network created a base for mutual support and professional renewal. We convened at twice-yearly working conferences at which we discussed baseline data on students in each program, taught each other our diverse research perspectives, discussed case studies of individual students, and articulated our assumptions about designing programs for adults. We wrote individually and collaboratively in several formats (Bartunek, Gordon, & Weathersby, 1979; Greenburg, Bergquist, & O'Donnell, 1989; Tarule & Weathersby, 1979) and also convened a national conference on adult development and program design to share the results of our efforts. FIPSE offered this opportunity in the form of funding and organizational focus for the dialogue. The network maintained itself through collaborative working relationships that allowed each individual and program its uniqueness in contributing to the common effort. Again, in this work I value the context: collaborative learning created the basis for institutional improvement.

Recently, I began a study of women business owners in New Hampshire. I started with baseline data: How many are there? What kinds of businesses? What obstacles do they face? What kinds of learning accompany the role? I began the study in response to the creation of a Small Business Development Program within the University System, and the fact that I had been appointed to a faculty committee overseeing the effort. The program provided me with a small grant and released time from teaching. The Whittemore School has provided the services of several graduate research assistants. These are incentives but the idea that excites me, and my purpose for the study, is creating visibility for women in business: documenting their presence, articulating their experience, and creating an awareness of their educational needs. The study is a small intervention intended to raise the consciousness of individuals and agencies throughout the state. One result is a Directory of Women-Owned Businesses in New Hampshire (Bartunek, Gordon, & Weathersby, 1980b). The directory gives women business owners access to them. Again, the process of articulating someone's experience more complexly, and creating the

possibility that they and others will change their attitudes or be moved to action, is what satisfies me.

These same concerns lead to intellectual work in conjunction with my teaching. I seek to "teach developmentally", which means designing instruction to "pull" developmental change. Currently, my students are MBAs in a course on human behavior in organizations and graduating seniors and experienced working women in a seminar on women in management. I want them to perceive their current and future work situations more complexly, and to be able to consciously shape their actions in line with their highest goals and developmental values. I want them to be able to adapt to organizational situations as they are, and to transform them, using their own processes of search as the basis for action.

Gathering and Analyzing Data

Given my goals, research is not a detached process. It is a collaborative process, involving others in elaborating, confirming and disconfirming interpretations. In formal studies I tend to use a mix of research procedures: standardized tests with scoring systems that have reliability and validity (e.g., Loevinger's Sentence Completion Test for ego development or Kolb's Learning Style Inventory) and my own questionnaires with some factual items that can be quantified and some short open-ended questions that have to be content-analyzed. However, I'm not satisfied until these are supplemented by face-to-face interviews and participant observation. Studying Goddard's Adult Degree Program, for example, I lived in the student dormitory through two group residencies and talked nonstop with anyone who would talk to me (and there was always someone) through breakfast, lunch, dinner, and parties. Similarly, I will not feel satisfied that I understand the situation of women business owners until I add to my initial survey data some individual or group interviews.

The point at issue here is what constitutes data, and how one arrives at the context for interpreting it. Because much of my work involves context setting, data gathering and analysis is not necessarily the central concern. For example, in creating a conceptual framework for synthesizing dimensions of adult development my concerns were

identifying central ideas about stages, sequences, levels and developmental change in research from a variety of disciplinary traditions and stating their commonalities while respecting their differences. The result was a broader, more elaborated concept of development and, thus, framework for application. What is of concern to me in much of my work is the validity of the synthesis as a context for action.

Relevance and Cooperation

Trust is important in the relevance of research to people's lives. Eliciting cooperation has not been a problem because I ask about people's experience and learning process, their assumptions in doing what they are doing, and their use of institutions for their own purposes. Establishing trust is a prerequisite which I usually deal with by saying clearly what it is I want to know, and asking for help in learning about it. I generally ask questions that people like to answer and need to answer for themselves. The experience of completing a questionnaire, or being interviewed, or sharing views with others can be rewarding itself if the topic is relevant. In addition to creating a mutually satisfying process, I repay people with thanks and with concrete outcomes if I can: for example, inclusion in the Directory of New Hampshire Women Business Owners or scores on the Learning Style Inventory and help in interpreting them. Collaborating with others in interpreting and applying results is for me a joy and a necessity. Perspective transformation is a shared activity.

Standards of Scholarship

My work is interdisciplinary, applied, theoretical, eclectic and synthetic. I use methodologies from social and clinical psychology, anthropology and organizational behavior: action research, survey research, psychological tests, individual and group interviews and participant observation. The end goal, however, is a synthesis beyond the methodologies. This creates within myself a constant source of tension. I imagine multiple audiences, and there is always some audience for whom the work is too theoretical, too applied, or whose assumptions about the nature of knowledge have been violated.

A recent paper provides useful illustration. Jean Bartunek and Judith Gordon, professors of management at Boston College, and I have collaboratively written a paper called "Teaching Administrators to Complicate Themselves" (Bartunek, Gordon, & Weathersby, 1980a). The paper grew out of an intensive workshop we conducted with national administrative teams from the Religious Order of the Sacred Heart. In the workshop, we designed a process to explore applications of adult development theory, career development, and notions of organizational socialization and change to the order's practices of inducting new members, and guiding their work choices and personal development over a lifetime. Our paper, which describes the rationale and activities of the workshop, is simultaneously too "theoretical" (but we made a conceptual breakthrough in relating theories of cognitive complexity and problem solving to stage theories of adult and organizational development), too "programmatic" (we describe our teaching designs), and not "empirical" enough (we couldn't measure the outcomes of our workshop precisely enough to publish in a journal of social change research). Yet the workshop was phenomenally successful, and I "saw" something happen. We created a context and series of activities that enabled participants to see the religious issue of "formation" from the perspective of several recent theories of individual and organizational development. This perspective change created a new base for policy and problem solving. Several administrative initiatives were changed in tone and substance because of this new understanding.

In my judgement this is good work. In terms of standards, I require the best I can do within my own framework. I want a sense that what I do and write is on the "cutting edge" of a vision. Or, alternatively, that it illumines a vision that the people with whom I'm working don't yet have, even if others have encounter similar notions long ago. Further, I have developed a sense of humor and humility about my sense of standards. What kind of academic standards can you have for transformational magic? The images have to cohere, and communicate — if someone else says "aha," or uses my work, or it creates relationships for me and evolves into still more work that has the feel of integrity, I am satisfied.

Influencing Other Researchers and Practitioners

My attempts to influence others arise from my conviction that results do not influence apart from a network of relationships, or the power of an idea. Results do not influence me. Relationships and ideas do.

I respond to requests to speak at meetings, collaborate on workshops, and write for informal forums that I know will have wide distribution — for example, the annual meetings of the American Association for Higher Education or the Academy of Management. I also seek those opportunities out, and design them into projects that I undertake. I consult on the phone with people who are interested in something I have done. I respond poorly, and very late, to letters. I respond to requests for copies of articles I have on hand. I feel pleased when someone uses my framework, or replicates a study, or bases a workshop on my materials. Otherwise, I am singularly neglectful of attempts to influence others with the results of my work. In my mind, ideas and contexts speak for themselves.

Protecting Time for Intellectual Work

Merging the worlds of action and disciplined inquiry is a frustration as well as a choice. It is difficult to find the time and space for intellectual work when there is so much else to do.

I should do better; I teach time management seminars as part of my business school faculty role. I plan two days a week for intellectual work, but that is not enough and I have difficulty protecting them. Also, I involve myself in so many things simultaneously (at this moment: two papers, an ongoing study, a seminar series, an ongoing consulting commitment and two one-time workshops) that progress on each is limited. I think I'm saved in this regard because I make it a point to meet commitments. Recently I have been writing, speaking, or developing workshops according to specific deadlines. With each new project, I try to push my thinking a little further. But I do not have time to *really* pursue intellectual work as I'd like. Partly, I prefer to work collaboratively, and that takes more time and effort.

I have more time than others, perhaps, because I am single and without dependents. I can be extremely flexible in how I use my time.

Space is also no problem. I have an office at home and one at the university. Psychological space is more of an issue. I need large blocks of time, some pressure-filled and others free of pressure, and also colleagues who share similar visions and struggles.

In terms of "how to," I think I protect myself again through relationships at home and across the country. I have people I can call when I need a quick critique, or a opinion. Usually, they are the same people who ask me to collaborate on an event or an article. Because I make good on commitments to people, my intellectual work gets done, and my life is richer for it.

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The Creativity of Being Marginal: A Style of Generating Research in Education

John D.W. Andrews

Forces That Shape Specific Research Questions

Much of the challenge and excitement in doing intellectual work — original research in education — arises for me through the juxtaposition of contrasting methods, styles or disciplines. In my experience, creativity stems from confronting incongruities and generating ways to integrate them into larger wholes. While this is a personal viewpoint, I think it finds confirmation in a considerable literature on thinking and problem-solving. This is based on the work of Piaget (Flavell, 1963), Wertheimer (1949), Hutchinson (1949), Gordon (1961), and others. What I mean to say by the title of this paper is that being "marginal," in the sociological sense of standing at the borders of several worlds, ensures me a continuous supply of incongruent experiences as grist for fruitful research ideas.

For example, it occurred to me recently that I have taken this sort of bridging stance in every intellectual and career-related role I have had. Both my undergraduate and graduate degrees were in interdisciplinary programs (spanning the social and behavioral sciences), and the three major jobs I have held have all been joint appointments, split between departments with somewhat different goals and perspec-

tives.* Once, for a brief time, due to some confused administrative decision-making, I even held three half-time positions simultaneously on the same campus! While one might well ask why I make my life so complicated, I feel that the gains have much outweighed the difficulties. I am also sure that, if I were writing this paper from my "clinical psychologist" perspective, I could provide personal, developmental reasons why a bridging or marginal role is comfortable for me; but that is another story. In terms of present-day results, it is precisely the mixture of fertile incongruities.

What specifically are these incongruities or mixtures? Some themes are described in the following sections.

The Combination of Pure and Applied

Much of my work, both as a psychotherapist and educational development practitioner, has involved an attempt to meld these often very desperate approaches. Ideally, this should be a real synthesis, not an awkward marriage. I think that in psychology, action settings can be used to generate some of the most profound theoretical issues just because what is humanly important (and therefore worth taking action about) is also often very relevant conceptually as well. This means that when I pick immediately practical issues to research, I try to select from among the endless array of possibilities those which are connected to some broader conceptual questions; and conversely, I'm happiest when I can approach problems of implementation (intervention in consultation or psychotherapy, for example) on the basis of a consistent theory or set of research evidence. As you might imagine, I'm particularly fond of Kurt Lewin's comment that "the best way to understand something is to try to change it."

One fruitful combination of pure and applied involves adapting research instruments to serve as workshop training exercises. The research "subjects" become collaborators: they study some aspect of educational process, learn about themselves, and see that the teaching situation is one which can be studied and influenced. For example, in one project I used George Kelly's Role Construct Repertory Test (Kelly, 1955) to examine instructors' internal and external models for good teaching and the changes which occur with experience. We use

the test in workshops by asking participants to fill out and discuss a simplified version of it in order to enhance awareness of how they conceptualize their own and others' teaching behavior. Another use of this approach stemmed from several studies I conducted with the Grasha-Reichmann Student Learning Styles Scales (Andrews, 1981a & b; Reichmann & Grasha, 1974), which showed how the match or mismatch between student style and teaching method affects learning. We turned this instrument into a workshop activity by asking participants to fill it out as they were when they were students. We then grouped those with similar styles together, and asked them to tell the whole group what sort of teaching their type of student would prefer.

Interplay between the Personal, Experimental, and the Public "Objective," Aspects of Events

As a consultant or psychotherapist, I often find myself emotionally involved in relationships with clients of one sort or another and acting on the basis of hunch or intuition. Yet at the same time I am committed to reaching objective conclusions, testing hypotheses, and acting on the basis of evidence rather than what may at bottom by myth or prejudice. It does no good to sacrifice either end of this polarity. To the contrary, I feel the most productive when I can crystallize my intuitive, personal reactions into something more systematic — or when those same hunches turn out to have more of an implicit framework underlying them than I had realized. My own allegiance in this dilemma is well expressed by a sign I once had in my office. Hung so that it was free to revolve, it had on one side this statement by psychological theorist George Kelly:

> Man looks at his world through transparent patterns or templets which he creates and then attempts to fit over the realities of which the world is composed. The fit is not always very good. Yet without such patterns the world appears to be such an undifferentiated homogeneity that man is unable to make any sense out of it. Even a poor fit is more helpful to him than nothing at all, (Kelly, 1955)

And on the other side, this poem by e.e. cummings:

> while you and i have lips and voices which
> are for kissing and to sing with
> who cares if some one-eyed son of a bitch
> invents an instrument to measure spring with? (Cummings, 1979)

Surely these two stances, each with its place in the scheme of things, express the need for an interplay between "right brain" and "left brain" thinking.

The Clinical and the Experimental

A familiar polarity in the realm of psychotherapy, also applicable to teaching and consultation, involves the distinction between developing a holistic formulation of a complex situation — such as a case formulation or a characterization of classroom atmosphere based on observation — and making a step-by-step or single-variable effort to identify causal relationships by means of experimental controls. People taking the clinical approach often find that their ability to make predications is less than they had estimated (Meehl, 1954), while the more rigorous method often leaves one contextless; with some well-verified propositions which become dubious when generalized to new situations or when removed from isolation and replaced in the complex welter of reality (Cronbach & Snow, 1977).

One sphere in which I have confronted this dilemma is the use of impressions and data in assessing student response to teaching (Andrews, 1977). Informal observations are often rich and evocative, but hard to verify; and questionnaire data are clear and comprehensive, but limited in focus and somewhat sterile. We have been experimenting with how to enrich the interplay between these two. First, we do this by feeding questionnaire information back to the class which generated it, and then using the numbers as starting points for more informal and open-ended discussions of how to improve instruction. For example, one might pick out certain questionnaire items on which dissatisfaction was high, and ask students to suggest some new approaches; or select ones which showed a polarization of student reactions and hold a discussion about the differing perceptions involved. We also work in the opposite direction, by holding informal discussions with the students (usually when the instructor is absent),

and then during the course of the meeting gradually crystallizing the group "consensus" into a series of propositions which can be checked by hand vote or by a written questionnaire tailor-made for that particular class. I find that conducting such sessions is very exciting and draws on my ability to shift rapidly from the clinical to the quantitative and vice versa.

Interdisplinary Interactions

As I mentioned above, most of my professional training has been in interdisciplinary programs, and I often look for research problems which lie at the intersection of two or more fields. Perhaps this helps explain my fascination with aptitude-treatment interaction studies. Such work intersects personality psychology, cognitive psychology, the social psychology of small groups, and educational method ɔlogy in the study of how individual characteristics influence the ability to learn in various educational settings (Cronbach & Snow, 1977). I have a parallel interest in how teachers' personalities affect their interactions with students and constrain their freedom to adopt various specific teaching methodologies. I explored this latter issue more deeply in one paper (Andrews, 1978), co-authored with a teacher who was simultaneously a client in psychotherapy and in teaching improvement consultation.

Extending Practiced Skills into Novel Settings

This way of generating interesting incongruities involves riding a familiar horse into new landscape. Sometimes this means moving across related disciplinary boundaries, as when I discovered that skills learned in conducting family therapy gave me a foothold in functioning as an organizational development consultant. In other cases, it means using generalists skills to work at a "process level." For example, my initial forays into educational consulting worked because I had a general sensitivity to interaction processes, which could be applied to classroom dynamics, and because I knew how to design participative workshop activities appropriate for a wide variety of different specific issues. These generalist skills gave me an initial wedge into education, particularly where the subject area was alien or

unfamiliar, and gradually I was able to turn this experience into specific hypotheses which could be tested by research.

For example, I recently completed a research project in chemistry, stimulated by the instructors' concern over student passivity. I began by observing teacher-student interactions, and by participating in them myself as a very ignorant (but non-passive) learner. From this we generated a discovery learning format, and compared it experimentally with the standard expository method (Andrews, 1981b). This was carried out in a "real life" pre-exam review session, and showed the superiority and practicality of the new method. There was also an aptitude-treatment interaction, in that self-described "independent" students had the highest quiz scores in the discovery session while "dependent" students learned better from the expository approach.

I might sum this up by saying that for me, intellectual productivity is like an arc of electricity between two poles. These poles must be just the right distance apart to produce a Zap! If they are too close together, we get current business as usual; connections are made but they don't produce much that is interesting. And if there is too much disparity, no opportunity arises for a flow to occur. This notion reminds me of the title I gave a recent article: "The Psychotherapy Neurosis: Now Bugs Eat DDT" (Andrews, 1979). The first "pole" of the title is conventional and formal in tone; the second is puzzling, evocative, metaphorical. What is the connection? This creates a buildup of intellectual "charge" which is released as the reader pursues the first few pages of the article. The two halves of the title reflect two types of thought ("left brain" and "right brain"?) and the reader gradually sees that this whimsical incongruity expresses a quite precise parallel involving the boomerang effects of two types of problem-combating methods (psychotherapy and pesticides).

The Creative Process

If the first stage of intellectual work involves setting up productive incongruities, a deliberate posing of thesis-antithesis tensions, then the second stage moves toward synthesis — a resolving of these tensions in a way that leads to new creative combinations. Seen from this standpoint, the elements sketched above become *criteria* for defining

productive, applied-research questions; the resultant products should simultaneously contribute to the action and research endeavors defined by those elements. Here are some characteristics of such problems.

Theoretically and Conceptually Significant

It should shed some light on an issue of learning or communication. Thus I try to define such questions with an eye to existing theoretical formulations, and frame them in such a way that they will extend or test such assumptions.

Applicable and Usable

The adage, "There is nothing so practical as a good theory" comes to mind here. Teachers need to make basic concepts about teaching and learning a part of their own personal construct systems, and one of the best ways to do this is to provide new or improved teaching methods that are also well-rooted theoretically.

Of Direct Concern to the Setting in Which I Work

This involves the active participation of teachers and/or students, in such a way that the "research subjects" may also be "collaborators." The system under study is in effect engaging in a self-study process. Thus the researcher-subject dichotomy is overcome at least in part.

Amenable to Formal Research Procedures

Conclusions which can be documented scientifically are at once the most valid and the most credible with scholarly-minded faculty. I have found it important to blend the contextual emphasis which is essential to application with the scientific experimental-control paradigm, since the latter often has a one-variable-at-a-time emphasis which does not translate well into use by the practitioner. This blending often involves correlational analyses of naturally occurring events, content analysis of spontaneously produced materials, and aptitude-treatment interaction research.*

Dissemination and Application

As a teaching development practitioner, I have evolved an approach to disseminating research results which blends many of the ingredients described above; the "bridging" approach helps make this communication effective. The method, which I will illustrate below, usually begins by identifying an issue which is simultaneously a campus concern and a conceptually interesting question. Such issues are ripe for a "Research and Development" effort in which new teaching approaches can be studied and then made available on campus. The problem should be defined in such a way that local faculty and TAs can identify with it and compare their own teaching with the published results. In this sense we are involved in an institutional self-study activity which taps instructors' curiosity about themselves and their colleagues. Communication of conclusions takes place via a newsletter which presents them in non-technical, implementable form, via workshops focused on the topic in question, and as an element in the consultation process.

Assessing Student Understanding

This project began with the observation that our relatively sophisticated Course and Professor Evaluation (CAPE) system generates an enormous amount of data about faculty each year, most of which is not used for teaching improvement purposes. This is partly due to uncertainty about how to apply the information, partly to indifference, and partly to the weak credibility of student evaluations in some instructors' eyes.

I decided to use this information to pinpoint a key teaching issue on campus, to test the validity of the student rating data themselves, and to create a starting-point for identifying teaching improvements. Examination of the 17-item evaluation form showed a considerable variation of item means campus-wide, and I selected a single item which was among the very lowest rated group and also seemed amenable to improvement efforts. This question asked students to rate the extent to which the professor knows if students are understanding the material, and it seemed to me that this was not only a key ingredient in effective communication of knowledge, but also an important

aspect of good student-faculty rapport. Naturally, it is disturbing that this rating was among the lowest.

On the basis of CAPE data, we identified some variables, such as class size, which affected this rating independently of the professor's teaching. Then we located those faculty, who even in relatively large classes, had excellent ratings on this item, and arranged to interview a number of them about the techniques they used to assess student understanding.* The idea of obtaining a contrast or control group was dampened by the realistic difficulties of doing applied research: It seemed tactless to approach faculty at the low end of the scale in order to ask them what they were doing, or not doing, to elicit poor ratings!

Having obtained information about teaching techniques via open-ended interviewing of faculty, we cross-checked these data by visiting a number of the same teachers' classes, and asking their students to describe on a questionnaire form what the instructors did to keep in touch with students' understanding. We also conducted telephone interviews with a number of randomly selected students, asking them to describe the methods of those instructors whom they would rate highest on the same CAPE item. These three "triangulated" sources of data yielded some common themes which I combined via content analysis. Rigor in the study was enhanced by having three independent sources of information but was weakened through lack of a comparison group. Yet on balance, there seemed reason to believe that the CAPE ratings — on this time at least — did correlate with some distinctive types of teacher behavior.

On this basis we wrote up a newsletter article which stressed the sorry state of teacher-student communication as indicated by the ratings, described the research structure of the study, gave some of the background findings, and listed a variety of teaching techniques which seemed likely to enhance the professor's awareness of the students' level of understanding. I hoped this would enhance the credibility of the CAPE ratings; stimulate interest among teachers — since colleagues were the subjects of the study and since faculty could compare their own published CAPE results with the research findings; and provide some alternatives for instructors who wanted to improve their performance.

Student Participation in Discussion

A second project (Andrews, 1980a) developed from the widespread concern expressed to me in workshops and consultation meetings, about "getting students to participate." While of course everybody wanted good quality comments about relevant points, the gut concern seemed to be with preventing those excruciating silences in which discussion dies out altogether. Once you get people saying something, you can then begin to shape discussions in the right direction. I decided that the first goal should be to study ways of getting more discussion "mileage," and I found that my intuitive sense of "discussion quality" could be boiled down to a set of simple objective indices by which to evaluate teacher questions. These consisted of counting the number of separate student responses, the number of student-to-student responses, and the number of student participants which followed each question. Bearing in mind such concepts as Guilford's (1962) distinction between convergent and divergent thinking, and Bloom's hierarchical classification of cognitive levels (Bloom, et al., 1956), I began listening for themes which distinguished questions with different "mileage" ratings. This led eventually to a content analysis coding scheme with good inter-rater reliability which confirmed some hypotheses about question structure. These results, all drawn from videotaped classes on our own campus, were written up in newsletter form with prescriptive suggestions about how to increase discussion participation. The research results also served as the basis for a workshop exercise, in which participants reproduce inductively the categories of the content analysis system.

Transition from Student to Teacher

The third endeavor began with a conceptual issue: the theme of transitions in adult development (Gould, 1978). In preparing a conference paper on the topic (Andrews, 1980b), I focused on a significant transition in the lives of the Teaching Assistants with whom I work. This is the shift from student to teacher, which is complicated by the fact that as a graduate student one does not really leave the student role behind in becoming a TA. To explore changes in attitudes and self-concept during this process, I drew on a well-developed clinical

research instrument, George Kelly's Role Construct Repertory Test (Kelly, 1955). Using this it was possible to conduct a reasonably well-controlled study of how self- and role-perceptions develop with increasing teaching experience.

Part of the appeal this test has always had for me is its self-reflective nature. Because it is essentially a sorting and concept formation task involving one's "significant others," the test procedure itself often leads the subject to interesting new insights about himself or herself. Thus the collection of data can become a self-study procedure that helps the TA to deal with a professionally significant issue.

In this project, the combination of research findings with the self-awareness effect enable me to generate a new training activity, disseminated through newsletter and workshops for Teaching Assistants. This involved completing an abbreviated form of the research instrument, and analyzing it in terms of self-image and the conceptual "lenses" through which the individual views the teaching process. Since these concepts tend to limit how one can perceive important situations, the final stage of the activity involved "consciousness expansion": the participants borrowed each other's "lenses" and categorized their own teaching selves according to these fresh dimensions. Those who participated felt this helped them see new alternative regarding some familiar personal and professional dilemmas.

In Conclusion

Despite what is said in formal expositions of scientific method, research creativity is a very personal matter and involves intuitions, idiosyncratic needs, individual stylistic patters, and emotion-laden preconscious thinking. Studies of the creative process are full of accounts that stress such nonlinear, unsystemizable mental leaps. While it is impossible to come up with a formula for generating productive research, it is feasible — and vital — to establish the *conditions* under which such sparks are most likely to arise. What I have sketched in this paper is a picture of the conditions which work for me; if they are transplantable, and thereby usable by someone else, so much the better.

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*The specific areas have included Psychology, Organizational Development, Applied Policy Sciences, Student Counseling and Psychotherapy, Information and Library Studies, and Teaching Development.

*A similar orientation to criteria of scientific validity has been suggested by Cronbach and Snow (1977) in their call for "experimental case studies" in which the effects of many simultaneously interacting variables can be assessed.

*This is similar to the procedure developed by Jacoby, Wilson, and Wood (Jacoby, 1976).

The Path of Passionate Inquiry: A comment on Smith, Young, Weathersby and Andrews

Michael M. Piechowski

These are stories of four researchers struggling with tasks for which there can be no formal preparation. Young, Weathersby, and Andrews share a background in behavioral research with its reigning paradigm of theoretical pluralism, a paradigm which avoids efforts to resolve incompatibilities and abandon weak or untenable theories. Smith does not share this background. A mathematician turned educational researcher, Smith was raised in a paradigm of pure theory and research and had to discover for himself the paradigm on which Young, Weathersby, and Andrews were bred.

The Outsider's Journey

Smith's paper provides an illuminating perspective on an outsider's path to the heart of the field. While all four authors are engaged in the life of action ("joining the worlds of contemplation and action"), Smith had to experience an actual rift between the theoretical scientist in him and his new role of a guide to teacher's behavior. His journey from "applying the pure to purifying the applied" brings out sharply issues that recur in debates about the nature of problems in social sciences versus those in the physical sciences. The crux of the matter

is not that problems are so different, although they very likely are, but that they have been pursued in such distinctly different ways.

Let us retrace Smith's steps in assisting faculty to improve the quality of teaching and learning.

Step 1. Searches for a relevant theory of learning and teaching.

Step 2. Takes a course which introduces him to the "state of the art"; it dawns on him that there is no theory that for him is both a *theory* and *relevant.*

Step 3. Finds cognitive psychology and information theory; these appear to satisfy his criteria of "relevant theory" except that they lack direct *applicability* to assist faculty in improving the quality of their teaching.

Step 4. Turns to psychology and learning theory as the basic science to feed instructional psychology, unaware (as an outsider) that cognitive psychology and information theory were the most recent developments in the field.

Step 5. Despair: "My basic approach had been severely shaken." "Perhaps I had come from mathematics with the wrong paradigm. I was looking for answers that didn't exist." "I was beginning to wonder if teaching was more an art than a science."

Step 6. The rift: He moves from the extreme of "hard" and "semi-hard" science to "super-soft" experiential learning. From rigor of theory to the live current of his own critical awareness: "I was learning by experiencing and by analyzing my experience."

Step 7. Revelation: The real problems and possibilities of learning are attached to the fact that teaching and learning occur *in groups,* a fact not addressed by theories of learning. Group process (social participation) engages affect (experiencing).

Step 8. Is struck by the significance of learning by doing and by carefully studying one's experience of it. The interplay of action and reflection, of the concrete and of the abstract.

Step 9. Becomes aware of the reality of individual differences: There are distinct styles of learning and knowing which are stable and specific to individuals.

Step 10. Resumes the search for theory but with a new direction, for any theory anywhere that would accommodate his new perception of what is essential to the work on improving teaching. There are echoes of the despair in Step 5: "I was depressed by the overwhelming number of models, approaches, and perspectives. I was looking for a theoretical framework which would help me make sense of all these various theories."

Step 11. Finds the relevant theory: Attribution theory, a social behavior theory of attitude formation, i.e., of forming judgments on causes, motives, abilities, and so on, from limited information, filtered and altered through the individual's own perspective (experiential history).

Step 12. Quest for research methodology to test the fit of his model — attribution theory as translated to teaching — with the facts. The case study approach turns outto be the most appropriate methodology.

The Shared Journey

If we now compare the steps of Smith's journey with those told by the other three, we find interesting parallels. In regard to the early search for theory (Step 1), perhaps only Weathersby shares it with Smith. For her the relevant theory was adult development theories of transformation. For Andrews, who thrives on bridging incongruities of the pure and the applied, Steps 1-4 are implicit. Because he desires to bring together the experiential and the objective and to bring the clinical and the experimental to bear on the complex task of improving instruction, he assumes implicitly the possibility of a relevant theory and the accessibility of formal research procedures. There are, however, differences of perspective. Andrews, Weathersby, and Young accept "the state of the art"; Smith finds it wanting. Young describes it well: "growing up intellectually and professionally in a milieu of varied and often competing theoretical positions and empirical inter-

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ests," where "all are necessary but none are sufficient." For the insider Young, to be exposed to the extremes of this diversity was "good luck"; for the outsider Smith, it was a state of confusion breeding depression and despair (Steps 5 and 10).

But confusion bordering on despair can occur for a natural scientist as well. Wolfgang Pauli, a physicist and later Nobel prize winner, wrote around 1925: "At the moment physics is again terribly confused. In any case it is too difficult for me, and I wish I had been a movie comedian or something of the sort and had never heard of physics" (Kuhn 1962, p. 84). The continuing confusion of competing theoretical positions in social science is not a function of their youth, as Smith states, but of inability or unwillingness to establish consensus about the central questions in their domain. Given such consensus, the competition would properly be fought under a criterion of the best empirical and theoretical resolution to each of these questions. It is easy to see why only Smith manifested despair.

What saved Andrews, Young, and Weathersby from despair was their ability to transcend enculturation. All four share a focus on the necessity of experiential learning (Steps 9-12). Andrews, in fact, runs the kind of workshops that were the turning point for Smith. Each of them made personal discoveries. Weathersby discovered the effectiveness of relating experience developmentally. Young discovered that thinking and behavior must be considered in an integrated way and also that the *context* of a process is crucial (very close to attribution theory!). But Smith can be credited with discovering a *phenomenon*: the natural occurrence that most significant human learning takes place in groups. In his appreciation of the properties of this phenomenon he also saw the teachers' response (willingness or reluctance as an integral part that had to be accounted for.

The sense of phenomenon is as much missing from educational research as is a sense of theory. The phenomenon that struck Smith as essential is seldom addressed by theories and research on learning. The theory he found to be both relevant and rich enough to accommodate the experiential, the interfactional, and the self-evaluative aspects of learning was a social theory, a theory about attitudes. Smith's discovery was aided by his status as an outsider, free of the enculturation which makes one accept the state of affairs rather than question

its very foundations. Smith's background as a scientist is also important in the way it sharpened his search for discernible properties and a theory applicable to them.

Themes in Common: Teaching and Learning

These steps uncover certain recurrent themes and regularity of progression in the tanning process of our four heroes:

- the challenge of a complex task: to find ways of improving instruction, ways which work with diverse teachers;
- the acknowledgement that teaching and learning engage individuals in group situations, that the process is interfactional and experiential;
- the conclusion that the teacher is also immersed in the dynamic of the group and so the teachers' own experiential flow is part and parcel of the whole;
- the necessity of immersing oneself in the phenomenon (process) while simultaneously subjecting it to careful scrutiny;
- the acknowledgement that no adequate knowledge of instruction and no adequate improvement is possible without the use of self;
- the necessity of seeking theoretical coherence for experiential knowing (subjective experience as a natural phenomenon accessible to objective formulation).

The convergence of the steps each followed is striking and can be stated very simply. Human learning is socially mediated; social interactions involve the participants' selves - their thoughts, feelings, motives, and manner of attribution; individualities of the participants constitute critical variables; experience has coherence, i.e., stability of form, therefore it can be studied systematically. This fits admirably with Margaret Mead's (1976) distinction of two sources of knowledge in regard to human beings: "It is necessary to recognize that our knowledge of ourselves and of the universe within which we live comes not from a single source but from two sources - from our capacity to explore human responses to events in which we and others participate through introspection and empathy, as well as from our

capacity to make objective observation on physical and animate nature."

Themes in Tension: Science and Art

The coherent and inevitable form of their experience clashes with one of Smith's conclusions about teaching, mentioned in Step 5, a conclusion that is often heard: "It is not a science, therefore, it must be art." This usage implies that what we call "science" is well-defined, knowable, carried out by clearly specified procedures; hence, reliable, reproducible, and teachable. Seen as its opposite, "art" would thus mean an undertaking that is ill-defined, unknowable, carried out by unspecified procedures; hence, unreliable, irreproducible and unteachable. Yet artists work extremely hard and with great concentration at what they are trying to produce, be it a dance movement, phrasing a melody, developing a character in a play or in opera, putting together a sculpture, painting a painting, writing a poem. The artist is guided by a very clear sense of what needs to be done, even though it often cannot be made explicit until the work is almost finished (Getzels & Csikszentmihalyi, 1976). This guiding conception, which Langer (1953) called "the commanding form," closely resembles the scientist's struggle with an unborn idea or image. Thus Darwin was guided in his work by the image of a tree of nature, an image that remained the one constant through several starts and erasures on how the process of evolution of the species come about.

Procedures in art are specified. Every art has its school where people are trained, often more rigorously than in science laboratories. Art is reproducible either as a repeated performance, often of much greater exactitude than a scientific experiment, or as an imitation. Judgements of originality and aesthetic value are highly reliable if the judges are artists or art teachers (Getzels & Csikszentmihalyi, 1976).

If none of these distinguish art and science, what can that distinction be? It must be the subject matter. Science gives us *explanations* of the structure of the universe: matter, light, motion, minerals, forms of life, weather (not a very good job there!). Art does not deal with explanations, it presents human motives, passions, triumph or defeat; it expands our perception and awareness in every range in which we

would follow it: the properties of space, light, sound, movement, human feeling. Art engages the self of the recipient; to contemplate art and savor it one needs to immerse oneself in it.

There is also a difference in language. There are no symbolic conventions by which a work of art can be decoded as mathematics, physics, and chemistry can be. Any formal language is discursive because it can be coded and manipulated according to certain rules. But the "language" of art is non-discursive because a work of art is an organic whole; it presents a complete Gestalt, the analysis of which is possible only after it has been apprehended as a whole (Langer, 1953). Its elements are understood only in relation to the whole work. Langer (1967) proposed that the manner of art is that of prescientific knowledge - the stage when impressions are distilled into an image, very much the way the physicists of Benjamin Franklin's times began to think of electricity as a fluid because their experience with electricity made it *seem* like something that flows.

Toward Resolution: From Image to Model

The path of scientific inquiry leads from experiences to impressions and ideas, and then to putting these ideas to test. The process of forming impressions, or *images*, from experience is the basic process of abstraction (Langer, 1967). It is the path from knowledge of the particular to perception of lawful regularities (Allport, 1942). One of the dimensions in Kolb's model of experiential learning cited by Smith is: from concrete experience and feeling to abstract conceptualization and thinking. Young's image of this process is "tanning of hides" - turning a raw product into a functional and elegant material. His leading idea that thinking and behavior must be considered in an integrated way is embodied by the "third floor of Erickson Hall," the place where faculty of diverse, even totally opposing, views were housed together. The images that recur in Weathersby express her efforts "to translate vision into action" - grasping, pulling, and effectual power: "grasping the power of the gestalt," "a necromancer seizing the power of an inward perceptual thread to transform outer reality," "designing instruction to pull developmental changes." Andrew's images are of bridging polarities and wedding incongruities,

"standing at the borders of several worlds" to have " a continuous supply of incongruent experiences" in order to feed intellectual productivity which is "like an arc of electricity between two poles. These poles must be just the right distance apart to product a Zap!"

An image is an intermediate step leading from the concrete to the abstract. We sometimes think that we can jump from the concrete to the abstract in one leap omitting the work of developing an image, but that is probably not possible. We must remember that the image is not necessarily visual, that every impression is that mental form to which we refer as, "it seems like...," "it feels like...." These are perceptions of qualities and any perceived quality can be expressed as an image, a metaphor, a comparison to a situation of experience that engenders a similar feeling.

When lawful regularities are established one can then proceed to the construction of explanatory models and theories. But the critical step is always formation of an image - the conversion of accumulated knowledge of the particular into its simplified analogue.

The impulse of Andrews, Young, Smith and Weathersby to approach faculty development and teaching improvement through experiential workshops and case study methods reflects their sense of respect for the *particular* since no knowledge is secure without it. "Not only is an initial acquaintance with particulars necessary for the construction of general principles, but in the last analysis no general principles can ever be applied except to concrete and particular objects. Thus, the individual case stands at the gateway and terminus of generalized knowledge" (Allport, 1942, p. 150). Similarly Young: "The only way to identify all relevant variables and observe their interrelationships is to study a few cases a long period of time, in depth, and from a number of different perspectives. The emphasis should be on validity, not reliability, at least in the stage we find ourselves in the study of college teachers." The recourse to experiential training can be also viewed as a means of generating the particulars that would engender images, prerequisites for construction of models and more advanced conceptions. Thus are science and art joined.

One could say that Smith turned to experiential learning out of his passion for knowledge and discovery, as did Andrews, Weathersby, and Young, but with one difference. Smith did not have to go against

a methodological paradigm that for several decades denigrated the particular as impressionistic, nonscientific, in short as "art."

The most important lesson is that the improvement of teaching and learning lies in experimentation. Experimentation is not a means to arriving at a more fixed form of instruction but an end in itself, the very method of teaching. It is a discovery method that includes the use of self. Passionate inquiry is the best form of learning and the best form of teaching.

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Section III

Evaluating Practices to Improve Teaching

No one gets out of graduate school without learning that the proper emphasis in "critical thinking" is on the word *critical*: if you don't think otherwise, you must not be thinking. Not surprising, then, is it that we are regularly, inevitably asked "What is the evaluation?" "Does it work?" "What is the effect?" "Yes, but compared to what?" "What is the level of significance? Surely at least the .05 level!"

Maybe. But probably not all the time, we mumble. Yet no collection of resources would be complete without some attention to assessment of our activities. The three articles which comprise this section address some common concerns: teaching effectiveness, course evaluation and the impact of developmental interventions.

Between one fourth and half of undergraduate education is conducted by graduate teaching assistants. Bob Menges and Jeremy Wilson note that this is not only fact, but a common source of complaint. What Bob and Jeremy show us, however, is that at least at Northwestern T.A.'s do a pretty good job in the view of undergrads.

Another old chestnut in the assessment game is course evaluation. At Syracuse Bob Diamond and Ricard Sudweeks have outlined a general recipe for approaching evaluation of college courses, wherein the focus is on course objectives, design and impact — usually the institutional and administrative issues that we must struggle with as developers and teachers, but also concerns relevant to students, even if at some remove.

The last article by Mary Deane Sorcinelli is an application of classical experimental design to measure the personal development she sees as one outcome of the widespread teaching consultation process originated almost a decade ago at the University of Massachusetts. Though her sample is small and the significance will be thus questioned, the issue is critical to all of us. Is there any worthwhile change in teaching, learning or administrating that does not have an essential personal (affective, emotional, identity) component? "All learning is affect," Joe Katz has claimed. Even if we quibble, we must be more intentional and conscious about our effectiveness with the affective.

Undergraduate Reactions to Teaching Assistants

Robert J. Menges and Jeremy Wilson

It is estimated that graduate teaching assistants are responsible for one-fourth to one-half of the undergraduate teaching load in American universities (Friedrich, 1979). Although institutions are understandably reluctant to publicize precise statistics, it is clear that graduate teaching assistants are the "professors" in a significant proportion of student-faculty contacts, particularly in courses for freshmen and sophomores.

The topic of preparing graduate students for teaching is approached in the literature in several ways. For example, Williams (1977) discusses the evolution of institutional policies regarding graduate teaching assistants. Training programs have been described and evaluated in journals devoted to teaching (e.g., Staton-Spicer & Nyquist, 1979; Levinson-Rose & Menges, 1981). Special materials have been developed for use by teaching assistants (e.g., Change Magazine, 1978).

Normative information about teaching assistants' duties and activities is, however, absent from the literature. In particular, we find no cross-department information about what teaching assistants do in their classes and labs, about students' satisfaction and dissatisfaction with what happens during those meetings, and about students' preferences regarding how meetings should be conducted.

A Survey

In order to establish some basic information about teaching assistant instruction, a survey was conducted in a sample of large, multi-section, lecture courses at Northwestern University. Supervisory faculty were asked to distribute an additional form (see Appendix A) with the course evaluation form they regularly use at the end of the quarter. Students were assured the survey was a separate study by the University Curriculum and Teaching Committee and would not be published as regular evaluations are. Teaching assistants were not identified by name, but the time and place of the meeting were noted; then data were combined across sections for each teaching assistant.

Usable questionnaires were returned by approximately 1,800 students in 44 different section of 14 courses in the same number of departments (anthropology, art history, biochemistry, biology, economics, geography, geology, history, religion, philosophy, physics, political science, psychology, and slavic languages). Each course had multiple sections except a social science department with only one quiz section and one science department where the number of responses for individual sections was so small that the results were pooled for the department only. With the exception of the latter course, response rates by course ranged from 50 percent to 85 percent.

General Characteristics of Respondents

Approximately 70 percent of the respondents were either freshman or sophomores. Their school of enrollment closely paralleled enrollments within the University: slightly less than two-thirds were in the College of Arts and Sciences and others were enrolled in one of five undergraduate professional schools. About a third of the respondents had three or fewer teaching assistants at the University, while nearly 30 percent had ten or more. Nearly half (46 percent) had been exposed to at least seven teaching assistants.

Ninety percent of respondents claimed to have attended the course section taught by the teaching assistant all or most of the time. Ninety-three percent said the teaching assistant was never absent from a scheduled meeting; only 1 percent indicated two or more absences. In responding to whether the teaching assistant attended the scheduled

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lecture sections of the course, 20 percent of the students reported they did not know, while 71 percent responded al or most of the time.

Students were also asked the extent to which they believed the teaching assistant was responsible for grading; 71 percent answered either largely or totally responsible and only 17 percent answered somewhat or not at all.

In summary, we conclude that respondents are fairly representative of our undergraduates, that they and their teaching assistant attend meetings regularly, that there is good attendance by the teaching assistant at course lectures, and that teaching assistants are perceived has having major responsibility for grading student work. About two-thirds of respondents had concurrent or previous experience with at least four teaching assistants with whom the present teaching assistant could be compared.

Perceived Quality of Teaching

Five questions evaluated the work of the teaching assistant. Responses were highly positive. Eighty-five percent of all respondents agreed or agreed strongly that the teaching assistant was well prepared for each meeting; 83 percent agreed or agreed strongly that the teaching assistant conveyed a thorough knowledge of the subject; 71 percent agreed or agreed strongly that the teaching assistant was readily available after class or during office hours for questions or consultation; 80 percent agreed or agreed strongly that the teaching assistant showed enthusiasm for the course; finally, 68 percent felt that contact with the teaching assistant enhanced or somewhat enhanced the course.

These items are positively correlated, as one might expect. The lowest correlation between any pair of items is .43 (knowledge and availability) and the highest correlation between any pair is .76 (knowledge and preparation). For further analysis, a composite score was created for each teaching assistant representing the average of the sum of these five evaluative questions across all of his or her students. All items were scored with higher numbers meaning more positive ratings.

Note the composite scores for courses or for teaching assistants are lower than might be expected from the percent of agreement with individual items. As it happens, teaching assistants in several of the larger courses received relatively high ratings and those in smaller courses received relatively low ratings. Thus, the distribution of composite scores and its mean is depressed, since the composite score does not take account of differential enrollments. The mean rating across all teaching assistants in all courses is 3.1 (standard deviation of .9).

Courses were grouped into disciplinary families for comparison: humanities, social science, and science. The mean rating for humanities is 3.1, for social science 3.0, and for science 2.7. As Figure 1 shows, differences within families of courses are substantial (a range of 1.0 for humanities, .9 for social sciences, and 1.0 for science).

Within particular courses there is also considerable variability. Ratings of the four teaching assistants in one science course, for example, ranged from 1.7 to 3.2, greater than the difference between any two courses. Figure 2 shows ratings of each teaching assistant in the five social science courses. (Note that most teaching assistants had more than one section and that these are averages across students in all sections of that teaching assistant.) The difference between the highest rated and lowest rated is 1.3.

We regard these ratings as satisfactory. Nevertheless, it is clear that some courses (and some teaching assistants) are regarded as considerably more effective than others.

How Time is Spent

Students were asked to estimate the proportion of time spent in various activities: clarifying readings, clarifying lecture material, introducing new material, taking quizzes or exams, grading and discussing quizzes or exams, dealing with assignments, and so on. Space permits reporting data for only one type of activity: classroom talk.

Students were asked to estimate the proportion of time spent in talking by the teaching assistant and the proportion of time spent in talking by students. As might be expected, differences across courses (Figure 3) are considerably greater than differences within courses.

(Figure 4 shows estimates for each social science teaching assistant.) Averaging all student responses, teaching assistant talk was estimated at 54 percent of class time (standard deviation of 24 percent). Estimates ranged across courses from a low of 24 percent to a high of 79 percent.

One humanities course had a range across its teaching assistants of 22 percent, but all other courses were 16 percent or less. The estimates for social science teaching assistants shown in Figure 4 are typical. As with effectiveness ratings, the maximum range was not found in courses with the largest number of sections.

We conclude that there are rather characteristic differences across courses and consistent patterns within courses in terms of the proportion of time spent by teaching assistants and students respectively in classroom talk.

How Time Should be Spent

In addition to estimating time spent in classroom talk, students were asked to indicate the proportion of time they *prefer* be devoted to teaching assistant and student talk. (See Figure 3 for all courses and Figure 4 for social science teaching assistants.) Students appear to be generally satisfied with the present situation. The preferred proportion varies from the estimated proportion in the direction of slightly less talk by the teaching assistant and slightly more by the student. If these preferences were reality, rates would become more uniform across courses.

Experience with Other Teaching Assistants

As noted above, respondents varied in the number of teaching assistants they had at the University. About a third had three or fewer, while nearly 30 percent had ten or more. The students were asked, "How competent have you found them to be in their own special fields?" Twenty-eight percent reported that all were competent, 26 percent that one was not sufficiently competent, 33 percent that two or three were not sufficiently competent, and 13 percent that several were not sufficiently competent.

This item parallels a question asked each year of a sample of freshmen and seniors concerning their experiences with faculty. In 1980, eight percent of freshmen and 17 percent of seniors responded "several not sufficiently competent" concerning instructors in their own special fields. We conclude that the general experience students have with teaching assistants is about the same or better than that which they had with faculty.

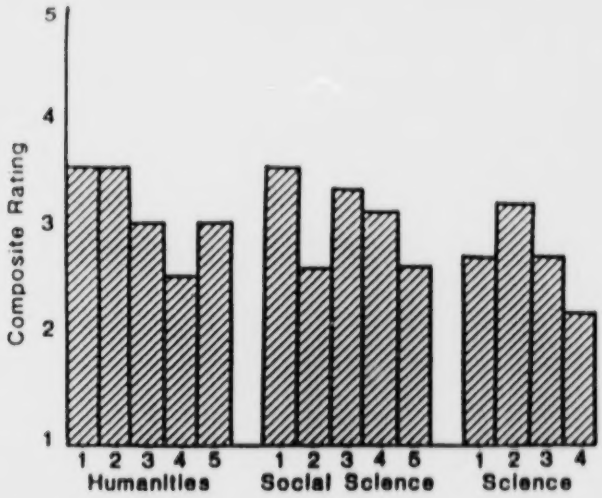
For Further Investigation

This survey provides normative data from one institution on undergraduate perceptions of teaching assistants. It shows general satisfaction among undergraduates with the quality of teaching assistant instruction and with how teaching assistants allocate time to class activities. But it also shows large differences across courses and across teaching assistants.

Such data are useful for gross comparisons, for identifying areas of need, and, if regularly gathered, for documenting the effects of interventions.

We offer this questionnaire for adaptation and use on other campuses. Among interesting questions which might be explored across the campuses are the following:

1. What are the actual and perceived responsibilities of teaching assistants regarding grading and how effective are they regarded as graders?
2. What is the relationship between course (and section) enrollments and ratings of teaching assistants?
3. In classes where students prefer more student talk, what do they want that talk to be about?
4. How do faculty who supervise teaching assistants prefer that time be allocated to activities? How accurately can they predict undergraduate responses to questions like those on the appended form?



Igure 1. Average Ratings Across Teaching Assistants for Fourteen Courses

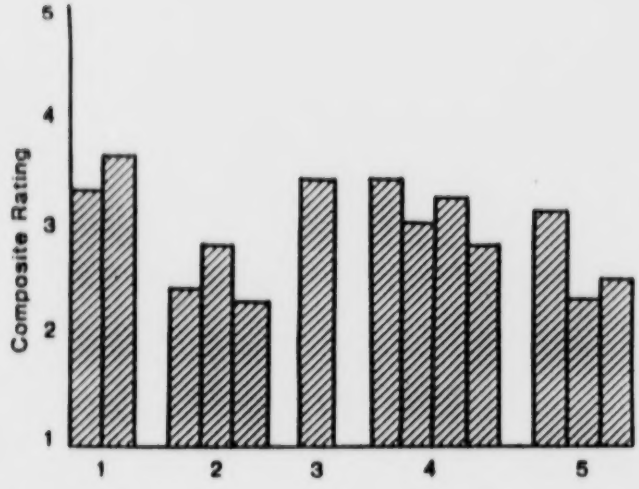


Figure 2. Ratings of Teaching Assistants in Five Social Science Courses

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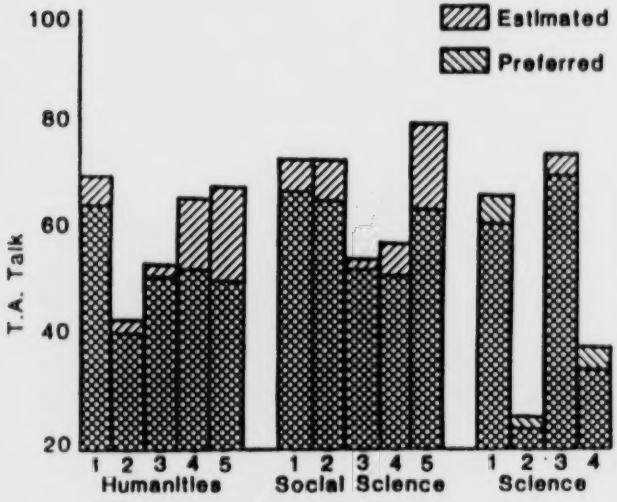

Figure 3. Proportion of Teaching Assistant Talk for Fourteen Courses

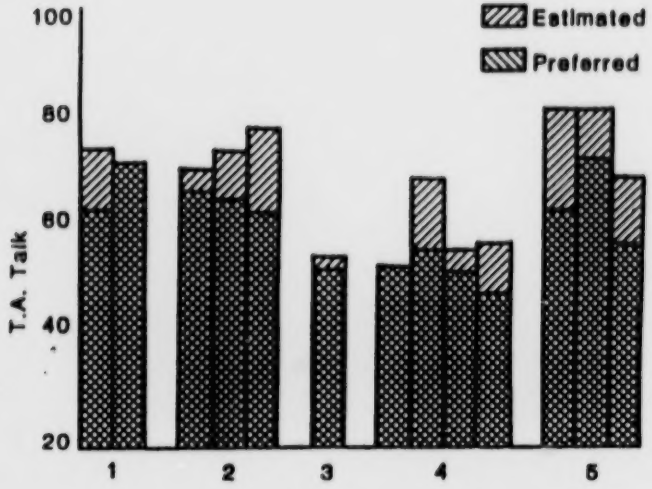

Figure 4. Proportion of Talk for Teaching Assistants in Five Social Science Courses

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University Committee Survey

The following questions are part of a survey for the University Senate Curriculum and Teaching Committee, and will *not* be published with the CTEC results. Questions refer to the work of *Teaching Assistants* in this course. Thank you for your help.

1. Your class
   - ___ freshman
   - ___ sophomore
   - ___ junior
   - ___ senior
   - ___ graduate

2. Your school of enrollment:_____

3. *In this course were you assigned to:*
   - ___ a discussion/quiz section conducted by a TA
   - ___ a lab conducted by a TA
   - ___ no TA for course (If you checked this response, it is not necessary to continue with the questionnaire.)

4. At what time were meetings with your TA scheduled? (This information is for use only in analyzing data. Individual TA's will be anonymous in the report.)
   day:_____ hour:_____ building & room:_____

5. I attended these meetings:
   - ____ all of the time
   - ____ most of the time
   - ____ half of the time
   - ____ sometimes
   - ____ hardly ever

6. The TA was absent from scheduled meetings:
   - ____ never
   - ____ once
   - ____ twice
   - ____ more than twice

7. The TA attended course lectures:
   - ____ all of the time
   - ____ most of the time
   - ____ half of the time
   - ____ sometimes
   - ____ hardly ever
   - ____ do not know

Please estimate the percentage of time spent in various activities. For each of the next four questions, your response should total approximately 100%.

Example: 40 talking by the TA 60 talking by students

8. About what percent of your meetings with the TA was devoted to:

____ talking by the TA ____ talking by students

9. About what percent of your meetings would you have preferred to be devoted to:

____ talking by the TA ____ talking by students

10. About what percent of the meetings was devoted to each of the following:

____ Clarifying readings
____ Clarifying lecture material
____ Introducing new material
____ Dealing with assignments
____ Other _____
____ Taking quiz or exam
____ Grading and discussing quiz or exam

11. Now, please indicate what percent of section time *should* have been devoted to each activity in order to be most helpful to you.

____ Clarifying readings
____ Clarifying lecture material
____ Introducing new material
____ Dealing with assignments
____ Other _____
____ Taking quiz or exam
____ Grading and discussing quiz or exam

12. To what extent was the TA responsible for grading your work in the course?

1 2 3 4 5
not at all totally

Indicate the extent of your agreement with each of the following: SA=strongly agree; A=agree; N=neutral; D=disagree; SD=strongly disagree

13. The TA was well prepared for each meeting.
SA A N D SD

14. The TA conveyed a thorough knowledge of the subject.
SA A N D SD

15. The TA was readily available after class or during office hours for questions or consultation.
SA A N D SD

16. The TA showed enthusiasm for the course.
SA A N D SD

17. Based on your knowledge about other sections, grading standards seemed to be approximately uniform from section to section.
SA A N D SD

18. Based on your knowledge about other sections, quality of instruction seemed to be approximately uniform from section to section.
SA A N D SD

19. About how many TA's have you had so far at Northwestern?
____ 1-3 ____4-6 ____ 7-9 ____ 10 ____or more

20. How competent have you found them to be in their own special fields?
____ all were competent
____ one not sufficiently competent
____ two or three not sufficiently competent
____ several not sufficiently competent

21. Overall, my contact with the TA in this course:

1	2	3	4	5
detracted from the course				enhanced the course

22. What were the strengths of your TA as a teacher in this course?

23. If there were problems for you in this course *due to the TA* please mention them below. Give an example of a problem, if you can, but do not name the TA.

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BEST COPY AVAILABLE

A Comprehensive Evaluation of a College Course

Richard R. Sudweeks and Robert M. Diamond

No two evaluation designs will be the same. In each instance the evaluation must be structured to serve the information needs of those involved in the decision-making process. There, is, however, a general list of questions that tend to recur in the evaluation of courses and other programs of instruction. The following list has been designed to assist faculty and administrators who are or will be charged with the task of evaluating a course. While no list could ever be considered complete, these items have been developed from efforts on several campuses that have dealt with the design and implementation of new courses and programs as well as the evaluation of existing courses and curricula. The list is intended to be a functional guide in the design stage of an evaluation. It should serve as a checklist making sure that all relevant questions have been considered.

In using this list, it must be remembered that *all the questions may not be appropriate in a single project* because of limitations in time, staff, and money. It is up to those involved to select the specific questions that should be addressed and to place priorities among them. It is our hope that this list will lead to more responsible decisions regarding which issues will be addressed in the evaluation. Questions which are not included in the evaluation should be omitted intentionally rather than by accident. The evaluation methodology that is elected should match the questions that are being asked.

Following the list you will find an example of the questions selected for use in evaluating two on-going experimental courses (see page 110).

Consider Each of the Following Questions and Check Those That are Appropriate for the Specific Course Your are Evaluating

I. Course Rationale

__ A. What population of students is the course intended to serve?
__ B. What student needs is the course intended to service?
__ C. What institutional, community or societal needs is the course intended to serve?
__ D. What other defensible reasons exist for offering this course?
__ E. What other courses serve these same needs?
__ F. To what extent does this course overlap with or duplicate these other courses?
__ G. On what grounds is the continued existence of this course justified and warranted?

II. Development and Current Status of the Course

__ A. When and under what circumstances was the course developed?
__ B. How frequently and how regularly has the course been offered?
__ C. To what extent has the enrollment increased, decreased, or stabilized from year to year?
__ D. What problems have been associated with the course and how have they been resolved?
__ E. To what extent is the course intended to be replicable from instructor to instructor or from term to term?
__ F. To what degree do the plans or design for the course exist in a written or documented form? In what documents (course approval forms, course outlines or syllabi, memos, etc.) do these plans exist?
__ G. How does the current version of the course differ from earlier versions? Why?

III. Credit and Curricular Implications

__ A. What credit is awarded for successful completion of the course? On what basis is this credit allocation justifiable?

__ B. In what ways can credit for this course be applied towards fulfillment of graduation and degree requirements?

__ C. At what level (lower division, upper division or graduate) is the course classified? Why? On what basis is this classification justified?

__ D. How does the course fit into the overall curriculum of the sponsoring department and college?

__ E. In which departments is the course cross-listed? Why? How does it fit into the curriculum of these departments or colleges?

__ F. What prerequisite skills or experiences are needed in order to succeed in this course?

__ G. What problems are experienced by students who do not have these prerequisites?

IV. Course Objectives

__ A. What are the formal, stated objectives of the course?

__ B. How feasible and realistic are these objectives in terms of the abilities of the target population and the available time and resources?

__ C. How are the stated objectives related to the adult life- role competencies students will need in everyday life outside of school?

__ D. How are the objectives related to the competencies students will need in their subsequent academic careers?

__ E. If the course is designed to prepare students for a specific professional or vocational field, how are the objectives related to the competencies they are likely to need in their future careers?

__ F. What values are affirmed by the choice of these two objectives as goals for this course?

__ G. What other purposes, intents, or goals do the faculty, administrators, and other interested audiences have for the course?

__ H. What goals and expectations do students have for the course?
__ I. To what extent are these additional goals and expectations compatible with the stated course objectives?

V. The Content of the Course

__ A. What (1) information, (2) processes, and (3) attitudes and values constitute the subject-matter or content of the course?
__ B. How are the various content elements related to the course objectives?
  __ 1. Which objectives receive the most coverage or emphasis? Why?
  __ 2. Which objectives receive only minor coverage? Why?
__ C. How is the content sequenced or arranged? Why is this sequence appropriate/inappropriate?
__ D. What means are used to integrate and unify the various content elements into a coherent pattern or structure? To what extent does fragmentation or lack of coherence appear to be a problem?
__ E. What values and assumptions are implicit in the decisions which have been made regarding content selection and emphasis?

VI. Instructional Strategies

__ A. What kinds of learning activities are utilized?
  __ 1. What activities are the students expected to engage in during class sessions?
  __ 2. What assignments or projects are students expected to complete outside of class?
  __ 3. In what ways are these activities appropriate or inappropriate in light of the course objectives?
  __ 4. How could these activities be made more effective?
__ B. What instructional materials are utilized?
  __ 1. How and for what purpose are the materials used?
  __ 2. How accurate and up-to-date are the materials?
  __ 3. In what ways do the materials need to be improved?
  __ 4. How could the materials be utilized more effectively?

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__ C. What instructional roles or functions are performed by the teacher(s)?
  __ 1. How could these roles be performed more effectively?
  __ 2. What important instructional roles are not provided or are performed inadequately? Why?

__ D. What premises and assumptions about learning and the nature of the learner underly the selection of instructional strategies? How and to what extent are these assumptions warranted?

VII. Procedures and Criteria for Evaluating Students' Achievement

__ A. What instruments and procedures are employed as a means of collecting evidence of the students' progress and achievement?

__ B. What criteria are used to assess the adequacy of the students' work and/or achievement? On what basis were these criteria selected?

__ C. How well do the assessment procedures correspond with the course content and objectives? Which objectives or content areas are not assessed? Why?

__ D. To what extent do the assessment procedures appear to be fair and objective?

__ E. What evidence is there that the assessment instruments and procedures yield valid and reliable results?

__ F. How are the assessment results used? Are the results shared with the students within a reasonable amount of time?

__ G. How consistently are the assessment criteria applied from instructor to instructor and from term to term?

__ H. What indications are there that the amount of assessment is excessive, about right or insufficient?

VIII. Organization of the Course

__ A. How is the course organized in terms of lectures, labs, studios, discussion sections, field trips and other types of scheduled class sessions?

__ B. How frequently and for how long are the various types ofclass meetings scheduled? Is the total allocation of time sufficient/insufficient? Why?

__ C. If there is more than one instructor, what are the duties and responsibilities of each? What problems result from this division of responsibilities?

__ D. What outside-of-class instruction, tutoring or counseling is provided? By whom? On what basis?

__ E. How well is the student workload distributed throughout the course?

__ F. To what extent are the necessary facilities, equipment, and materials readily available and in good working condition when needed?

IX. Course Outcomes

__ A. What proportion of the enrollees completed the course with credit during the regular term? How does the completion rate vary from instructor to instructor or from term to term?

__ B. What proportion of the enrollees withdrew from or discontinued attending the course? Why?

__ 1. To what degree does their discontinuance appear to be related to factors associated with the course?

__ 2. How does the attrition rate vary from instructor to instructor or from term to term?

__ C. At the end of the course, what evidence is there that students have achieved the stated objectives?

__ 1. For which objectives was the course most/least successful?

__ 2. For what kinds of students was the course most/least successful?

__ D. What effects does the course appear to have had upon students' interest in the subject-matter and their desire to continue studying and learning about this subject?

__ E. What other effects did the course have upon the students?

__ 1. How were their values, attitudes, priorities, interests or aspirations changed?

__ 2. How were their study habits or other behavioral patterns modified?
__ 3. How pervasive and/or significant do these effects appear to be?

__ F. What evidence is there that students who have completed this course were adequately/inadequately prepared for subsequent courses for which this course is intended to prepare them?

__ G. To what extent do students rate their experience in the course as producing a meaningful and worthwhile contribution to their self-development?
__ 1. In what ways were the students satisfied or dissatisfied with the course?
__ 2. What suggestions do they have for improving the course?

__ H. What evidence is there, if any, that the experience of teaching the course has a positive or negative effect upon faculty members?

X. Institutional Costs & Benefits

__ A. What are the time, space, equipment and facilities requirements of the course?

__ B. What are the requirements of the course in terms of faculty and staff?

__ C. What other support services are required by the course?

__ D. What direct instructional costs are associated with this course?

__ E. What benefits derive to the department, the college and the institution for having offered the course?

Questions to be Investigated in Evaluating Two Inter-Disciplinary Communications Skills Courses

1. Course Objectives
   A. What are the formal, stated objectives for each course? In what ways are the objectives similar? How are they different?
   B. How appropriately do the stated objectives of each course match the needs of the target population?
   C. What other unstated purposes, intents or goals do faculty members, administrators, and other interested persons have for each course?
2. Student Population Serviced
   A. How comparable are the groups in terms of demographic variables such as age, sex, high school rank, SAT scores, academic major and full-time student status?
   B. Why do students choose to enroll in one course instead of the other? Were students turned away from CMS 100X because of a ceiling on enrollment? How many?
3. Types of Learning Encounters & Opportunities Provided
   A. How do the two courses differ in terms of content and organization?
   B. What are the primary modes of instruction used in each course? Approximately what proportion of the students' time (in class plus time spent on assignments) is devoted to listening to lectures, reading, writing, taking tests or small-group discussion?
   C. What are the criteria for determining passing grades in each course?
4. Attendance and Course Completion Rates
   A. To what extent do the courses differ in terms of average daily attendance?
   B. What proportion of the students withdraw from or discontinue each course? To what extent was their discontinuance associated with factors related to the courses?
   C. How do the courses compare in terms of the proportion of students who complete the course with passing grades (full credit)?

5. Observable Student Outcomes
   A. What gains in students' writing skills appear to have occurred in each course?
   B. What gains in performance on a test of English grammar and usage appear to have occurred in each course?
   C. What gains in students' oral presentation skills appear to have occurred in the trial course?
   D. What effects did participation in the courses have upon students' writing apprehension and speech apprehension?
   E. What effects did participation in the courses have upon students' attitudes towards the practical value and importance of clear and persuasive expression in both oral and written forms?
6. Student Satisfaction
   A. To what extent were students' expectations of the courses met? In what ways were their expectations not met?
   B. To what extent did students perceive the content and learning activities to be relevant to their needs and interests?
   C. How did students rate the quality of the instruction provided?
   D. What suggestions and recommendations did students have for improving the course?
7. Impact on Course Instructors
   A. What activities do the instructors of the trial course perform as a team? What activities do they perform individually?
   B. What effect does participation as an instructor in the trial course appear to have upon faculty members? How does it affect their philosophy of teaching? To what extent do they borrow ideas and methods from the trial course for use in other courses they teach?
   C. What proportion of the instructors want to continue teaching the course? What proportion prefer to discontinue their involvement? Why?
8. Support Requirements
   A. What are the space, time, physical facilities and equipment requirements of each course?
   B. What instructional materials and support services are required by each course? What are the relative costs involved?

C. What are the requirements of each course in terms of full-time equivalent faculty and staff? What dollar outlays per student are required?

D. What policy and/or logistical changes would be necessary to support the continued use of each course?

9. Feasibility of Expansion

A. What is the feasibility of creating additional sections of the course and offering it to a greater number of students each term? What problems would likely be encountered?

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Effect of a Teaching Consultation Process Upon Personal Development in Faculty

Mary Deane Sorcinelli

The purpose of this exploratory study was to answer two primary questions: (1) Does the teaching consultation process promote personal growth of instructors as well as change in teaching skills?; (2) In what ways do instructors experience personal growth in their teaching lives as a result of this process?

Design

The study involved two groups: 7 experimental and 7 control subjects. The experimental group included 5 males and 2 females who volunteered to participate in the semester long teaching consultation process. The control group of 4 males and 3 females had not volunteered for nor had any contact with the teaching consultation process and received no treatment. The two groups were closely matched in terms of age, rank, and division affiliation.

Personal Orientation Inventory. Personal growth was measured by the Personal Orientation Inventory (Shostrom, 1966). The POI measures personal growth defined through humanistic concepts of self-actualizing persons are characterized by their increased knowledge of self, acceptance of self, autonomy, flexibility, and ability to develop meaningful interpersonal relationships. The POI consists of

150 two-choice, paired opposite statements of values, behaviors, and attitudes seemingly of importance in the development of the self-actualizing individual. The statements are scored on two major scales, Time Competence and Inner-Directedness, and ten subscales which reflect a particular facet important to personal growth.

Personal Interview. Due to the exploratory nature of the study, the experimental groups' perceptions of self-growth and change were assessed through a semi-structured personal interview. The interview provided an opportunity to explore perceptions, values, and attitudes toward teaching that could not be examined through a questionnaire. The interview instrument consisted of five open-ended questions which asked faculty to identify what they had learned about themselves, their students, and their teaching style and behaviors as a result of the teaching consultation process.

The teaching consultation process has been described in detail by Bergquist and Phillips (1977). Its three stages include an *initial analysis of teaching* through an instructor interview, classroom observation and videotaping, student questionnaires and instructor self-assessment. Teaching strengths, problems, and improvement goals are identified by the instructor and consultant following the information collection. During the *teaching improvement* stage, the instructor and consultant devise activities to assist the instructor in achieving his or her improvement goals. During the *final review of teaching*, the consultant and instructor recollect information about the instructor's teaching in order to reassess teaching strengths and areas of improvement.

In order to allow for personal development as well as changes in teaching skills and behaviors, several activities designed to assist the instructor in increasing knowledge of his teaching self were included in the teaching consultation process. Some activities focused on increased awareness of the "internal self" of the instructor—his teaching behaviors as perceived by self others, and how those behaviors reflected personally held beliefs and values. All were designed to move the faculty member from self-exploration to self-understanding.

These personal growth activities, which blended in as a natural and integral part of the teaching consultation process, were adapted from techniques suggested by practitioners in the fields of faculty

development and humanistic education (Bergquist & Phillips, 1975; Curwin & Fuhrmann, 1975; Weinstein, 1971). They included: Teaching Styles Activity, Introductory Personal Interview, Pre- and Post Observation Interviews, Teacher Attitude Activity, and Teaching Patterns Activity.

Personal Orientation Inventory. The POI was administered several days prior to the beginning of the semester to all experimental and control group faculty. The experimental group instructors then participated in the teaching consultation process throughout the semester. The author acted as a consultant for each instructor. The control group did not work with a consultant. The POI was administered to both the experimental and control groups two weeks following the end of semester classes.

Personal Interview. Besides taking the POI as an indication of personal growth, faculty in the experimental group were interviewed a month after they had completed the teaching consultation process. A week before each scheduled interview, an interview schedule was mailed to each faculty member, indicating the kinds of questions that would be asked during the interview. Faculty were asked to write down their initial responses to each question prior to the interview. Each interview was tape-recorded and lasted approximately one hour. Interviews were completed within two weeks.

Results and Discussion

Table I presents the means, standard deviation and the values of pre- and post-test scores for subjects in the experimental and control conditions on the 12 POI scales. All 12 mean scores of the experimental group changed in a positive direction following their involvement in the teaching consultation process. Statistically significant changes occurred on the two major scales, Time Competence and Inner Directedness and the subscale of Capacity for Intimate Contact.

On the other hand, control groups mean scores increased on four subscales, but decreased on seven scales, including the two major scales. Only the subscale of Self-Acceptance was statistically significant.

TABLE I

Means, Standard Deviaion, and Test of Significance of Difference Between Means of POI Scores on Pre- and Post-tests for Experimental and Control Groups

POI Scale	*Experimental Group*					*Control Group*				
	Pre-test		Post-test		t	Pre-test		Post-test		t
	M	SD	M	SD	df=6	M	SD	M	SD	df=6
Time Competence (Tc)	18.29	2.92	19.00	2.70	*2.50	16.00	4.20	15.00	3.91	-.96
Inner Derection (I)	89.43	15.93	97.14	10.51	*2.35	84.43	19.45	84.28	18.20	-.07
Self-Actualizing Values (SAV)	20.71	3.72	22.28	1.70	1.51	21.15	3.77	20.00	3.79	-1.80
Existentiality (Ex)	21.14	5.17	23.00	5.03	1.36	20.57	6.80	21.57	4.65	.82
Feeling Reactivity (Fr)	16.86	3.33	19.14	.69	1.73	14.43	5.09	14.71	4.82	.26
Spontaneity (S)	12.86	3.62	14.29	1.98	1.76	12.00	4.50	11.86	4.98	.16
Self-Regard (Sr)	13.29	2.43	14.00	1.73	1.70	12.85	3.85	12.00	3.65	-1.44
Self-Acceptance (Sa)	17.43	3.46	19.00	3.65	2.29	15.00	5.80	14.14	5.14	*-2.52
View of the Nature of Man (Nc)	12.71	1.98	13.14	.69	.66	12.57	1.28	12.57	.98	0
Synergy (Sy)	7.14	1.87	7.86	.69	1.51	7.43	.98	7.14	.69	-.79
Acceptance of Aggression (A)	18.29	4.23	19.29	2.06	1.02	15.57	3.95	16.14	4.41	1.00
Capacity for Intimate Contact (C)	18.71	3.64	21.29	2.14	*2.46	17.71	4.39	19.00	5.56	.79

* $p < .05$, two-tailed test

A two tailed test performed between the pre-test mean scores of the experimental and control groups indicated no significant difference at the outset on any of the 12 POI Scales.

The more positive results of the experimental groups' scores suggest that a teaching consultation process which focuses on expanding awareness of self as well as improvement in teaching skills may be an effective method for fostering personal growth and improved interpersonal functioning of faculty who volunteer for such a process.

While the POI results were encouraging, examination of the experimental groups' responses to the personal interviews offered further insights into the kinds of changes in faculties' awareness of their teaching selves. Three major themes emerged from the data. As a result of involvement in the teaching consultation process, the experimental subjects reported (1) changes in awareness of self as teacher; (2) changes in their perceptions of students; (3) changes in teaching skills and behaviors.

Changes in Awareness of Self as Teacher. In the personal interview, a majority of the experimental subjects (N=5) described a heightened awareness of self as teacher. Awareness of classroom performance, behavior, patterns and feelings was mentioned as a positive result of the process.

More than half of the respondents (N=4) reported an increased awareness of their teaching style as a result of several personal growth exercises (Introductory Personal Interview, Teaching Styles Activity, Teaching Patterns Activity). They felt they had gained both the ability to understand and modify their teaching style so that it would be more compatible with their feelings and beliefs about teaching.

All of the sample (N=7) reported a strong sense of self-affirmation and an increase in self-confidence. Factors which influenced their feelings of self-regard and allowed for a clearer picture of teaching strengths included the supportive assistance and interpersonal skills of the teaching consultant, use of the personal growth activities, and information on their teaching from a variety of data sources (videotape, observation, student questionnaires).

In addition to having realized their strengths as teachers, all of the respondents (N=7) indicated an increase awareness of areas in their teaching lives which called for improvements. Over half of the sample

(N=4) commented on their realization that their teaching lives were not static, and indicated that the non-judgmental role of the teaching consultant allowed them the confidence to move toward more satisfying behaviors.

Finally, over half of the respondents (N=4) indicated personal changes outside of their teaching and classroom experience. These respondents pointed to positive changes in their interpersonal dealings with colleagues and family as sources of personal satisfaction. These findings reflect the beliefs of faculty development spokesmen (Bergquist and Phillips, 1975; Gaff, 1975) who have argued that change in the professional performance of an instructor often touches on family life, relationships with colleagues, and self-image.

Changes in Awareness of Students' Needs. More than half of the respondents (N=4) reported a greater overall sensitivity to student needs in their teaching lives. Respondents indicated a greater empathy for students and an acceptance of their feelings, ideas, and opinions.

Six of the respondents also pointed to an increased awareness of students' academic backgrounds and cognitive needs. In particular, faculty appeared to be more conscious of the needs of the adult as well as the traditional learner.

Over half the sample (N=4) mentioned increased awareness of student needs in affective areas of the teaching and learning process. Greater sensitivity to factors such as students motivations, interests, feelings, and involvement in the learning process was indicated by faculty.

More than half of the respondents (N=5) indicated a greater awareness of student learning styles and how they related to faculty teaching styles. Respondents indicated not only a sensitivity to a variety of learning styles, but also a willingness to assess and work with different styles and preferences of students.

Finally, six of the respondents reported an increased respect for and rapport with students. Getting to know students by name, consulting with students in and outside of class, and improved interpersonal communication with students were areas faculty most often noted change in following their involvement in the process. Several faculty members' increased sensitivity to students seemed to have been

awakened as a result of personal growth exercises, particularly the Introductory Personal Interview and Teaching Styles exercise.

Changes in Teaching Skills and Behaviors

All of the experimental subjects (N=7) reported improvement in skills related to stimulating student interest and involvement in the course. Respondents pointed to increased participation through teacher or student-centered discussion, and use of alternative teaching methods such as case studies or paired and small group activities. More than half the sample (N=5) noted improvement in questioning skills and felt such skills allowed them to surface more thought-provoking issues. Several subjects (N=4) spoke of becoming more sensitive to their interactions with students during class and of working harder to maintain an atmosphere of mutual respect.

Most of the respondents (N=6) indicated improvement in skills related to organization and clarity. Areas such as improved course organization and individual class planning and presentation were mentioned most frequently.

A final area in which faculty indicated improvement was that of evaluation. Improved testing and grading procedures and sensitivity to their impact on students' were noted by four subjects.

Responses from students on the post-TABS questionnaire corroborated faculty perceptions of change in teaching skills. An approximation of student responses indicated that between one-third and one-half of the students responding to post-TABS saw "significant improvements" in skills and behaviors that had been the foci of their instructor's improvement efforts. An additional one-fifth of the students saw "some improvement" in teaching skills. At the end of the semester, only one-fifth of the students suggested improvement or considerable improvement was still needed by their instructor.

Summary and Conclusions

It is difficult to draw sweeping generalizations from a small sample size. Three interrelated conclusions seem reasonable clear, however. First, a teaching consultation process with an affective component appears to be an effective method for fostering increased

levels of personal growth in faculty participants. Participants appear to achieve a greater awareness of who the are and what they do as teachers—their values, attitudes, and teaching styles. They seem to achieve a more positive view of themselves, to accept others, and to move toward further change and self-growth. The kinds of personal growth realized through the process and illuminated by this study supports the viewpoint of faculty development spokesmen such as Bergquist and Phillips (1975) and Gaff (1975). They propose that programs that seek to improve instruction will have greater impact if they emphasize a wide range of attitudes, values, and sensitivities concerning teaching and learning. While dealing with the professional aspects of faculties' lives, the teaching consultation process seems to have left an imprint upon their personal lives as well.

The second conclusion is that through the teaching consultation process, participants appear to have an increased awareness of and improved interpersonal functioning with the students they teach. It seems that the more aware faculty become of their own feelings and needs, the greater their ability to understand students' feelings and needs. Participants appear to be more knowledgeable of students' affective and cognitive concerns, to interact more closely with students, and to view students as partners in the teaching and learning process. The findings seem to support Maslow (1962) and humanistic psychologists such as Combs (1974) and Rogers (1969) who maintain that self-understanding enables one to understand and relate to others more effectively. In this study, reflecting on their teaching selves appears also to have helped faculty to know their students in new ways.

The third conclusion that can be reached is that through the teaching consultation process personal growth in faculty is accompanied by changes in teaching skills and behaviors. It appears that the more aware an instructor is of himself and his students, the more conscious he becomes of his classroom behavior. The more conscious he is of behavior, the more open he becomes to a broader range of teaching behaviors and styles. Indeed, much like the subjects in Erickson and Erickson's (1979) study on the teaching consultation process, this study's subjects also felt the process helped them to improve their teaching skills and behaviors.

The apparent interrelationship of the above conclusions should be particularly interesting to faculty trying to improve the quality of instruction. As the instructors in the experimental group gained a more positive view of themselves, they seemed willing to listen to students—to meet students on a person to person basis. Perhaps, as a conjecture, they feel less threatened and gained more confidence and trust in the capacity of their learners. Likewise, as their perceptions of themselves and their students grew more positive, these faculty appeared more willing to experiment with teaching styles. Specifically, they were willing to test their own teaching skills and behaviors, inviting constructive criticism from the teaching consultant and their classes.

It is impossible to infer causality from these occurrences. For instance, one cannot conclude that a more positive self-image necessarily leads to improvement in teaching skills. But it is significant to realize that, in this study, these three phenomena (positive self-regard, sensitivity to student, improvement in teaching skills) occurred in an interrelated fashion, implying an interactive effect.

The interrelationships among the findings of the study also hold several implications for faculty development programs, particularly those using the model developed by Melnik (1976). First, the findings support the notion that those concerned with increasing the teaching effectiveness of faculty should include experiences which will assist instructors in developing personally as well as pedagogically. The personal growth activities suggested here offer a starting point for the integration of personal and professional development in a teaching improvement process.

Also, the findings raise questions concerning the characteristics of faculty who are most assisted by the teaching consultation process. Although the difference between the POI pre-test scores of the experimental and control groups were not significantly different, they are of interest. As the experimental group scores were somewhat higher prior to their involvement in the process, one might hypothesize that faculty who volunteer for a teaching improvement process have a higher level of self-actualization than those who do not, and thus are more motivated toward and amenable to such growth processes.

Finally, the findings suggest that teaching consultants could prove to be even more catalytic as change agents if they had opportunities for training in interpersonal as well as instructional development skills. Competencies in human relations techniques and helping skills (i.e. active listening, para-phrasing, perception checking) could only serve to enhance the effectiveness of teaching consultants.

Faculty development procedures such as the teaching consultation process have focused on the improvement of teaching and have been evaluated exclusively in terms of their impact on teaching skill performance. This study has broadened the landscape of such endeavors to include examination of the person who is the teacher. It has indicated the importance of looking upon faculty as whole human beings who have values, feelings, and attitudes which directly influence their professional development. This study suggests that the teaching consultation process is able to integrate personal growth in faculty with growth in their professional skills as teachers.

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Section IV

Tools for Training and Development

Here is where the rubber hits the road. The materials that follow are attempts to translate theory into practice. Much of what we read (and do) for training our colleagues to be more effective teachers is rough and untidy. It often seems simplistic. But that is the state of the art — and it will always be so to some degree. In the classroom, in the faculty lounge and at the sylvan retreats where workshops are held, we must finally decide what to do on Monday.

The Erickson and Erickson team have tackled the unenviable task of identifying critical principles of learning and showing how they can be implemented in writing course objectives, teaching and testing. Their examples have been used in a workshop format designed by Bette Erickson and Sher Reichmann. Similarly, "The Design of Intellectual Experience" is an abstraction of an approach to course design that Don Finkel and Steve Monk use in their summer workshop for faculty.

The next four pieces — on class discussions, charismatic teaching, the first day of class and developing consciousness of and solutions to women's special needs in academia — all contain explicit suggestions for workshop designs. They are based on successful practice, but require sensitive adaptation to particular settings. A rule from microteaching design applicable here is: know what your client wants before you offer help! A good idea (but hardly a rule) is: call these folks and

discuss your setting and approach before adapting these designs. Learning is a peculiar business — it resists mass production.

The last three articles are a smorgasbord of suggestions, representing the wide range of practice which we call professional and organizational development. Linc Fisch gives us an introduction to some delightfully heuristic filmic devices for training. Marina Estabrook turns the spotlight on what is often taken for granted — the physical space in which we teach. And a team from Minnesota illustrates the effects of yet another approach to individualized consultation with faculty — the teaching/learning strategy recalled a century ago in the image of Mark Hopkins sitting opposite a single student on the end of that New England log.

Knowing, Understanding, and Other Forms of Learning

Bette LaSere Erickson and Glenn R. Erickson

Introduction

Probably the most common verbs in higher education are "to know," "to understand, " "to think," and "to appreciate." They sound like pretty good verbs for college classrooms. They call to mind some admired intellectual activities.

However, they are also among the most slippery verbs we use in college classrooms. Consider, for example, what comes to mind when we say we want students "to understand." To some, understanding means being well informed — remembering important facts, events, ideas, theories. To others, understanding involves the ability to explain, to marshal evidence, to detect the unwarranted conclusion. Understanding is used synonymously with remembering, relating, comparing, applying, and a whole host of other intellectual processes.

Blurring the distinctions among these intellectual activities would not be a problem if developing such abilities required the same teaching and learning activities. However, research on learning suggests there are some important differences among abilities — differences which call for different teaching methods and study procedures.

These materials describe four of the more common types of learning outcomes pursued in college courses. They also include some notes on how to formulate questions, write objectives, select teaching methods, and construct test items for each type. Although you may find it necessary to adapt or reshape the categories to fit your subject matter, we think they provide a useful conceptual tool for clarifying

what you want students to learn and for making instructional decisions.

Memorization

In most courses, there is some basic information which students are expected to commit to memory. Such information sometimes includes names, definitions, terminology, or other facts. More often in college courses, students are asked to remember more complex information—fundamental laws, theoretical propositions, the characteristics of a period, points of view expressed in their reading.

For instance, the following questions ask students to recall information which was presented during instruction.

> What are the distinguishing characteristics of the following approaches to literary analysis: the historical approach; the psychological approach; the thematic approach; the "elements of fiction" approach.
>
> Briefly summarize the procedures, the advantages,and the confounding variables associated with each of the following research designs: cross-sectional; longitudinal; time-sequential; and experimental.
>
> Briefly describe the following Piagetian concepts: assimilation; accommodation; concrete operational thinking; formal operational thinking; conservation.
>
> Knowing how an insect feeds can be important in controlling insect damage to crops. What are the characteristics of each of the following types of feeders: generalized feeders; sucking feeders; boring feeders; rasping feeders. What general principles and techniques are suggested in your readings for controlling each type of feeder?
>
> Briefly describe the distinguishing characteristics of each of the following artistic movements: Neo—Classicism; Romanticism; Realism; Impressionism; Post—Impressionism.

Many people — faculty, as well as students — do not recognize that these questions simply ask students to recall information which they've committed to memory. To be sure, they differ from questions which ask students to recall a name or a date or some other isolated bit of information. These questions require students to remember much more complex information.

However, the distinguishing feature of memorization is NOT its complexity. Rather, this type of learning may be recognized by what we ask students to do with the information: *to remember it and be able to recall it.*

Memorization does not enjoy a very respectable position in higher education these days. To some extent, its reputation is deserved, since we've not always been sensible or frugal about what we ask students to memorize. Yet, being able to recall basic information is often necessary for further study in a course or in a field. Moreover, recent research on thinking and problem-solving suggests that the knowledge available to students plays a critical role in developing other intellectual skills and being able to transfer them to new problems and situations.

Writing Objectives for Memorization

It's fairly easy to write objectives which inform students that memorization will be required. However, because we're often embarrassed to tell students and colleagues that we want students to memorize, we camouflage these expectations in language which makes them sound more worthy. We ask students "to become familiar with" or "to understand." To the extent what familiarity and understanding really mean memorization, it's far more helpful "to tell it like it is." The following sample of objectives make it pretty clear that memorization is required.

> Be able to describe the typical questions and conventions which characterize the following approaches to literary analysis: the historical approach; the psychological approach; the thematic approach; the elements of fiction approach.
>
> Be able to describe the procedures, the advantages, and the confounding variables for each of the following research designs: cross-sectional; longitudinal; time-sequential; and experimental.
>
> Be able to define the following Piagetian concepts: assimilation, accommodation, conservation, concrete operational thinking, formal operational thinking.

Be able to recall the characteristics of the major types of feeding systems found in insects and to recall the recommended techniques for controlling each type of feeder.

Be able to recall the distinguishing characteristics of each of the following artistic movements: Neo—Classicism; Romanticism; Realism; Impressionism; Post—Impressionism.

Teaching for Memorization and Retention

Memorization and retention have been widely researched and much is known about the factors which affect them. The following findings are especially important.

Meaningful material is learned faster and remembered longer than meaningless material. Meaning is a key variable affecting memory and retention; some believe it's the most important variable. However, meaning does not lie in the subject matter; it lies in the relationship between the subject matter and the learner.

Although meaning obviously varies from student to student, we won't go far wrong if we assume that most students find the concrete more meaningful than the abstract; the familiar more meaningful than the unfamiliar; the present more meaningful than the distant past or distant future. That doesn't imply that we should abandon the abstract, the unfamiliar, the past or the future. Learning about such things is why students are in our classes. However, it does suggest that we'll be more successful if we begin instruction with the concrete, the familiar, and the present.

In some subjects, it's relatively easy to point out how material relates to students' current questions and concerns and to draw examples from their experiences. Other subjects require more creativity, and sometimes it seems the only way to make something familiar or concrete is by way of analogy, metaphor, or some other form of poetry.

Practice facilitates memorization and retention. As we'll see, practice is an important condition for all types of learning, although the practice looks different for each type. For memorization and retention, practice takes the forms of recitation, drill, and review. Thus, it helps (1) to provide study questions; (2) to encourage students to quiz themselves and each other after reading an assignment or hearing

a lecture; (3) to give quizzes; (4) to ask questions in class which require students to verbalize the information which they are to remember.

The rebellion against memorization has discouraged professors from using such instructional techniques in college courses. However, if we wish students to commit material to memory and to remember it for any length of time, recitation and drill and review are sound instructional techniques.

Testing for Memorization

Writing questions which test memorization merely requires instructors to ask students to recall or recognize material which was presented during instruction. To be sure, many of us could improve our skills in writing such items by attending to some technical properties of test item construction. However, we think the more critical problem is that too few faculty and students distinguish between items which test memorization and items which test other types of learning. Thus, we'd like to raise the red flags on that issue from the beginning.

Consider the English professor who spends a week discussing the "Initiation" themes in the following short stories: "Editha," "The Open Boat," "The Bride Comes to Yellow Sky," and "I Want to Know Why." The professor then includes the following essay questions on the exam.

> "Editha," "The Open Boat," "The Bride Comes to Yellow Sky," and "I Want to Know Why" might be thought of as initiation stories in that they dramatize a naive, child-like character going through a difficult, painful, or bewildering experience which initiates him into a view of the world which the reader perceives as more realistic or mature. Discuss any *TWO* of the above of initiation.

At first glance, this question appears to require some fairly complex analytical skills. However, because the essay asked students to discuss literature which had previously been discussed in class, it's quite possible—indeed, probable—that students memorized the key ideas and appropriate references discussed in class and reproduced them on the exam.

This situation illustrates a testing practice found in many college courses and in many disciplines. Faculty and students mistakenly assume that if a problem or question calls for an analysis or a solution or a conclusion, then it automatically tests something other than memorization. However, if the question is one which was discussed during instruction, then we're on very shaky ground if we conclude that students are demonstrating anything other than memorization.

Concept Formation

We all know students who can rattle off definitions of important concepts and terms, who can state fundamental laws and principles, who can describe key theoretical constructs. Many students can even give the definitions, state the laws, and describe the constructs in their own words.

However, if we show these same students a particular example of a concept, many are unable to name the concept it exemplifies. If we present a new situation, they cannot recognize the laws or principles which are operating. If we give them an interpretation or an analysis, they cannot identify the theoretical perspective taken by the interpreter or analyst. And, we begin to worry that students have learned the definitions of concepts, statements of principles, and summaries of theoretical constructs in rote fashion.

One good indicator of comprehension and understanding is Concept Formation—*the ability to see relationships between specific instances and broader generalizations.* Two kinds of challenges characterize this type of learning: (1) Give the broader generalization and ask students to supply specific examples and illustrations; or (2) Give specific examples or illustrations and ask students for the broader generalization. Because students often respond to the first challenge by supplying examples they've memorized from the text or readings, we recommend the second type of challenge.

The following sample of questions all require the ability to recognize the relationship between a specific instance and some broader generalization.

> Attached you'll find a paper analyzing Hawthorne's "Rappaccini's Daughter." Which approach to literary criticism does it exemplify?

Professor Wisdom was interested in the effects of age on political attitudes. He used a well-known and widely accepted attitude survey that measures where an individual falls on the conservative-liberal continuum. He asked 100 people of different ages to complete the survey and tabulated the results. He found that older subjects responded more conservatively and concluded that aging is characterized by a progressive increase in conservative attitudes. Professor Wisdom's research design was an example of...a) cross-sectional; b) longitudinal; c) time-sequential; or d) experimental?

While playing with her paints, Sally discovered that blue and yellow make green. However, when her teacher asked her what colors are green, Sally said she didn't know. As soon as Sally is able to recognize that because blue and yellow make green, then green is composed of blue and yellow, Piaget would say she will be demonstrating which of the following? a) conservative; b) formal operational thinking; c) perpetual thinking; d) concrete operational thinking.

A foreign insect which resembles a grasshopper and appears to like spinach has been introduced into the U.S. Entomologists are beginning to worry that the insect will destroy the nation's spinach crops, so they've been studying the insect in the lab. They've determined that the insect is hypognathous. They've also noted that it has mandibles, wings, and large head muscles. Based on this information, the insect is probably an example of what type of feeder?

The slide I'm showing you is a reproduction of a painting we've not discussed. Study the painting and decide whether you think it's an example of Neo—Classicism, Romanticism, Realism, Impressionism, or Post—Impressionism. Then explain what characteristic features of the painting led you to your decision.

Writing Objectives for Concept Formation

Concept formation objectives should somehow capture the key feature of this form of learning: the ability to recognize the relationship between specific instances and their broader generalizations. If the challenges are to be posed as we've recommended, then the objectives should indicate that students (a) will be given specific instances and (b) asked to determine the broader generalization exemplified, illustrated, or represented.

The following statements illustrate some different ways in which such objectives might be phrased.

Given samples of essays written by literary critics, be able to identify the approach to literary analysis which the critics have taken.

Be able to recognize examples of cross- sectional, longitudinal, time-sequential, and experimental designs.

Be able to recognize examples of assimilation, accommodation, concrete operational thinking, formal operational thinking, and conservation.

Whenever you encounter a new insect, you should be able to identify the type of feeding system the insect possesses.

If I show you a painting we've not studied, you should be able to recognize the artistic movement to which it probably belongs.

The most difficult part of communicating Concept Formation objectives to students is getting them to understand that they'll be asked to recognize*new* examples and illustrations. Many students mistakenly assume that they'll be asked to recognize examples which were presented in their texts or in class. This leads them to some rather unproductive study behaviors. They write every example in their notes and spend hours memorizing them. Later, they may complain that test questions were not discussed in class.

Thus, it's important that professors stress that this type of learning involves the ability to recognize *new* examples and illustrations whenever they're encountered. It helps if that information can be included in the objective. Also, since many students pay closest attention when instructors talk in terms of tests, tell students from the start that the examples discussed in class or in the readings will not be the ones which appear on the tests. The test questions will ask them to recognize examples which they've never seen before.

Teaching for Concept Formation

Fortunately, much is known about how concepts are learned and about the instructional activities which promote Concept Formation. Certainly, more is known than will be discussed here. However, the following suggestions reflect some of the critical conditions for Concept Formation.

Highlight the critical properties, distinguishing characteristics, or key ideas of the concept, principle, generalization, or theory. These will provide the bases or the criteria for judging whether or not specific instances exemplify or illustrate or represent the broader generalizations. Thus, it's critical that students have complete and accurate information about what "defines" the concept.

Present examples of the concept or principle or generalization or theory, noting in each case how the example embodies the key characteristics. The necessity for providing examples and contrasting them with non-examples is well documented in Concept Formation studies. Fortunately, most instructors know this and take great pains to find especially telling examples and illustrations.

Provide opportunities for students to practice recognizing examples of concepts, illustrations of principles, representations of theories. As noted earlier, PRACTICE is a critical condition for all the forms of learning discussed here. In the case of concept formation, providing practice opportunities requires instructors (a) to pose a series of specific instances; and (b) to ask students the appropriate questions about them: Which concept does this exemplify? Which principle or law or generalization is illustrated in this situation? Which theory or approach does this interpretation reflect? Which theme is being dramatized here? In each case, instructors should ask students to note how the example or situation does or does not embody the critical properties or characteristics of the concept, generalization or theory. The questions included in the introduction to the section on Concept Formation provide some good examples of practice exercises.

Start with relatively simple and clear examples and gradually introduce more complex and subtle examples. The first task is to illustrate the properties, characteristics, features which define the concept or generalization or theory. Students will be able to recognize these more clearly if they don't initially get lost in an illustration which is complicated, abstract, or foreign to them. However, if all the examples are simple ones, students won't learn to recognize more complex ones.

Draw examples and illustrations from a variety of situations and settings. This recommendation is based on studies of transfer of

learning. Students are more likely to be able to recognize new examples if the examples used during instruction sample the range of situations and contexts in which you want students to be able to recognize the concept, principle, or theory.

Be prepared to provide more practice examples and illustrations than you ever imagined might be necessary. There's no magic number which we can offer as a guide. However, we think most instructors grossly underestimate the number of examples needed and the amount of practice required.

Testing for Concept Formation

By now, it should come as no surprise that testing for Concept Formation involves (a) presenting a specific instance or situation—one that students have not seen before; and (b) asking students which concept it exemplifies, principle it illustrates, theory it reflects, theme it dramatizes. The questions at the beginning of the section on Concept Formation might make good exam questions, assuming they were not discussed during instruction.

At the risk of belaboring the issue, we'd like to stress what does *NOT* constitute a test of Concept Formation. Questions which ask students to recall or recognize definitions of concepts or statements of principles or summaries of theoretical constructs are not adequate tests of Concept Formation. They can be answered on the basis of memorization.

Similarly, questions which present examples or illustrations which were presented or discussed during instruction are not adequate tests of Concept Formation. Even though the form of the question is appropriate, such questions also may be answered on the basis of memorization.

Application

It's one thing to be able to define a concept, state a principle, or summarize a theory. It's another thing to recognize examples or illustrations of these things. And, it's yet another to be able to use them to solve problems, perform analyses, make decisions, draw conclusions.

Application is the ability to use concepts, principles, generalizations, theories and the like to explain or analyze or otherwise cope with specific situations or problems. Most college professors stress the importance of being able to apply previously learned material to a variety of problems and situations. Indeed, many believe that the primary reason for learning such material in the first place is because it's useful in understanding and coping with the situations and problems one encounters in life.

The challenge to apply involves presenting a specific problem or situation and asking students to use what they've learned in some way—to explain the situation, to solve the problem, to predict an outcome, to make a recommendation, to formulate a policy. Application questions usually tell students explicitly or strongly imply which concepts, principles, theories, or generalizations students should use in order to complete the task. (We mention this by way of foreshadowing. It's yet another thing to cope with specific situations without being told which concepts or principles or theories one should use.)

The following questions all ask students to use something they've learned in a specific situation or problem.

> A major publishing company has decided to publish a book on Hawthorne's short stories. The publishers plan to devote one whole section of the book to "Rappaccini's Daughter." That section will include several articles, each analyzing the story using a different approach to literary criticism. You've been asked to write the article which analyzes the story using a thematic approach to literary criticism. Outline what you'd say in such an article.

> Professor Wisdom was interested in the effects of age on political attitudes. He used a well-known and widely accepted attitude survey that measures where an individual falls on the conservative-liberal continuum. He asked 100 people of different ages to complete the survey and tabulated the results. He found that older subjects responded more conservatively and concluded that aging is characterized by a progressive increase in conservative attitudes. Use your knowledge of the strengths and limitations of cross-sectional research designs to critique Professor Wisdom's conclusions.

> Peter, who is mid-way through the first grade, is having a great deal of trouble with subtraction, although he did fairly well with addition. He listens carefully when his teacher explains the material and tries hard

to do the problems in his workbook. But he just can't seem to get it. Identify one activity which Piaget might recommend to help Peter.

A foreign insect which resembles a grasshopper and appears to like spinach has been introduced into the U.S. The insect is threatening the nation's spinach crops. As an entomologist, you have been hired by a famous sailor from California to combat this pest. Preliminary study revealed that the insect is a generalized feeder. How would you treat the spinach crop to control the pest?

Posted around the room are reproductions of 20 paintings. You have been asked to organize an exhibition designed to capture the spirit of Impressionism. However, space limitations permit you to include only 5 paintings. Which of these paintings would you include in the exhibition? Be prepared to explain why you chose the paintings you chose.

Writing Objectives for Application

Minimally, application objectives should tell students two things: (1) that they'll be given specific problems or situations; and (2) that they'll be asked to use what they've learned to do something with those problems or situations. At their best, application objectives also say something about the *nature* of the problems which will be given and alert students to the *ways* in which they'll be asked to use what they've learned. The following statements illustrate how such objectives might look.

Be able to discuss any American short story, using each of the following approaches to literary analysis: the historical approach, the thematic approach, the psychological approach, the elements of fiction approach.

Given research on the effects of aging, be able to use your knowledge of the strengths and confounding variables associated with cross-sectional, longitudinal, time-sequential, and experimental designs to critique the studies.

Given descriptions of children's responses in instructional situations, be able to use Piagetian constructs to explain their responses and to recommend appropriate instructional activities.

Given information about the feeding systems of insects which are making pests of themselves, be able to recommend procedures for controlling the pests.

> If I show you a collection of paintings, you should be able to organize or critique an exhibit which claims to represent one of the following artistic movements: Neo—Classicism, Romanticism, Realism, Impressionism, Post—Impressionism.

As with Concept Formation objectives, students often misinterpret application objectives to mean that they will be expected to solve the problems or explain the situations or analyze the literature which were discussed in class. Again, it's important to stress that the ability to apply involves coping with a variety of *new* problems and situations. To put it in terms which students are more likely to understand, test questions will present problems and situations which have not been discussed in class or in the readings.

Teaching for Application

Before talking about how to teach for application, there's some good news and some bad news. The good news is that lots of research has been done in this area, usually under the rubric "transfer of learning." Many studies have asked essentially the same question: "If students learn how to apply concepts, principles, or theories in one situation, will they be able to apply those concepts, principles, or theories in other situations?

The bad news is that the research findings have not been very encouraging. It appears that not much transfer occurs, even in the best of instructional circumstances. In other words, we can teach students how to apply our subject matter in one situation; but give them a new situation, and they act as if they've never encountered such a problem.

There has, of course, been much speculation and some research into why application skill seem so difficult to develop. While we can't be as confident as we were in discussing Memorization and Concept Formation, we can offer the following suggestions.

Demonstrate how to apply course materials to specific problems or situations. That is, pose a sample problem or situation and show students how you would go about solving it or explaining it or whatever. Highlight key decisions and explain why you did what you did.

Provide opportunities for students to practice application. Again practice is a critical condition for application. It requires instructors to pose specific problems or situations and to ask students to solve the problems or explain the situations or predict the outcomes or whatever.

Be keenly aware that instructors demonstrating how to apply is not the same as students practicing how to apply. If you solve all the problems or explain all the situations, you'll get lots of practice. . . but you probably don't need it. Your students probably do.

Pose problems and situations which sample the range of contexts in which you hope students will be able to apply course material. Transfer of learning studies found that when the problems used during instruction differed dramatically from the problems posed to test for transfer, students appeared unable to transfer. However, when instruction sampled the range of contexts in which students were expected to apply, transfer seemed to increase.

Help students recognize similarities in problems and situations. One obstacle to transfer seems to be that students fail to recognize similarities between new problems and those they've already solved successfully. Professors might help students recognize such similarities by asking: What are the "givens" in this situation? What are you asked to do? How is this situation similar to (or different from) other problems you've solved? What concepts and principles did you use in solving those problems? Would they work in this problem or situation?

Plan instruction systematically so that students receive lots of guidance on early attempts to apply and less and less guidance on subsequent attempts. Students often need step-by-step prompts, hints, and feedback when they first encounter problems or situations which require them to use course material in some way. In fact, we recommend that initial practice exercises be done in class where instructors are available for such guidance. In any event, teaching for application is not the time to use the "sink-or-swim" approach. Many students will find it too frustrating, will give up prematurely, and may drown in their sense of failure.

However, students do need to learn to cope with problems or situations on their own. They won't if professors continue to "lead them through" the analyses or the solutions or the critiques. Thus, it's

important to withdraw gradually the prompts and the hints and the other step-by-step questions.

Provide more practice than you ever dreamed might be required. Again, most of us grossly underestimate the amount of practice which students need. We forget what it's like to be a novice in our fields—how it felt to encounter a problem the first or second or tenth time.

This means, of course, that teaching for application takes time. It's tempting to short-cut the instructional process and hope for the best. However, instructors who fall prey to such temptations are likely to be disappointed when they test their students' application skills.

Testing for Application

In order to test students' abilities to apply, instructors must (a) present a specific problem or situation—one that has not been discussed previously; and (b) ask students to use some concept or principle or theory to solve the problem, analyse the situation, predict the outcome, or whatever the appropriate task might be. The examples of questions included in the introduction to application might be good test items, assuming that they were not used during instruction. However, how to write multiple choice items which test application is a topic considered elsewhere.

We'd like to stress here that asking students to recall the definition of a concept, the statement of a principle, or the description of a theoretical construct is NOT an adequate test of whether students can apply the concept, principle, or construct. Such questions on the basis of memorization. The problems and situations posed on exams must be *new* to students.

Finally, questions which test for application usually state explicitly or strongly imply which concepts, principles, theoretical constructs, or ideas students are to use in dealing with the situation or problem. In part, it's this feature which distinguishes Application from Complex Problem Solving.

Complex Problem Solving

Complex Problem Solving is the ability to use course material in coping with real life situations and problems. It resembles Application

in that it involves presenting a particular problem or situation and asking students to do something with it—to perform an analysis, to find a solution, to offer an explanation, to recommend a policy, to reach a decision. Indeed, it may be useful to think of Application and Complex Problem Solving as a continuum rather than as separate categories. However, for purposes of instruction and evaluation, it's helpful to make some distinctions.

Application problems and situations are usually fairly structured and direct about what is to be done. It's clear which features of the problem or situation deserve attention and which concepts and principles are to be used. Thus, an application task states explicitly or strongly implies how to approach and think through the problem or situation. In contrast, Complex Problem Solving tasks and questions permit more flexibility in determining how to approach and think through the problem or situation for several reasons.

First, the problems and situations posed in a Complex Problem Solving question are usually more complicated and less structured. More information is presented, and some of the information may be irrelevant and conflicting. Key ideas and relationships are less obvious and may be embedded in a morass of detail. The task to be accomplished should be clear, but the questions or issues to be considered along the way may not be so obvious. Thus, Complex Problem Solving situations usually demand some restructuring. They may require students to determine what questions to ask or issues to consider, to decide which features of the situation warrant attention, to judge the credibility of sources and resolve conflicts, to take some key elements out of the contexts in which they're presented, to see relationships which are not explicitly stated or immediately obvious.

Secondly, a Complex Problem Solving task does not tell students which concepts, principles, theories, or ideas they should use in coping with the situation. Part of the challenge is to sort through what one has studied and to select that which seems relevant and useful. Furthermore, Complex Problem Solving tasks usually require students to use—or at least consider—more than a single concept or principle or construct or idea.

Finally, there is usually more than one approach to a Complex Problem Solving task and a range of acceptable answers. Thus, part

of the problem is to establish the criteria by which an acceptable answer is to be judged, to decide what kind of evidence or support is required, to gather the evidence, and to defend one's answer in light of the criteria established and the evidence available.

In short, Complex Problem Solving situations and problems resemble "real life" situations in their complexity, their ambiguity, and their structure.

The following questions illustrate Complex Problem Solving challenges.

> A major publishing company has decided to publish a book on Hawthorne's short stories. Originally, the publishers planned to devote one whole section of the book to "Young Goodman Brown." They were going to ask several people to write articles on the story, each using a different approach to literary criticism. However, the publishers have now realized that they can't afford to devote so much space to "Young Goodman Brown." Instead, they want to include just one article analyzing "Young Goodman Brown," and they want the most illuminative and interesting analysis they can find. If you were going to submit such an analysis, what would you say about "Young Goodman Brown?"

> The attached report summarizes a study conducted by Professor Wisdom investigating the effects of age on religious attitudes. Professor Wisdom has sent you this summary because he'd like your opinions about the research design, findings, and conclusions. Outline what you'd say in a response to Professor Wisdom.

> Peter, who is mid-way through the first grade, is having a great deal of trouble with substraction, although he did fairly well with addition. He listens carefully when his teacher explains the material and tries hard to do the problems in his workbook. But he just can't seem to get it. Peter's teacher has asked you for advice, because she knows you are knowledgeable about several theories of child development and learning. Write her a letter outlining your recommendations and explaining which theory or theories prompted you to make those recommendations.

> In the attached letter, a farmer describes an insect which appears to be making a pest of itself. As you'll discover, the farmer has provided a rather detailed description of his situation and has admitted that he's not altogether sure how much of the information is relevant. However, he'd like your advice on what to do about the insect. Prepare a response in which you recommend procedures for controlling the insect and explain why you recommend those procedures.

Posted around the room are reproductions of 20 paintings. The art museum in your city wants to open an exhibit entitled "The Modern Tradition," and the museum has space for up to 15 of these paintings. The museum has asked for your advice about which paintings to include and how to organize them. What recommendations would you make and why?

Writing Objectives for Complex Problem Solving

It's difficult to write clear, concise objectives for Complex Problem Solving. On the one hand, the objectives should alert students to the complexity of the problems or situations which will be posed and should indicate the kinds of decisions which students will be asked to make. On the other hand, the objectives shouldn't be so lengthy or complicated that students get lost in the process of reading them. We think the following sample of objectives strike a reasonable compromise.

Be able to write an interesting and illuminating analysis of any American short story assigned. This will require you to consider the various approaches to literary analysis, to select the approach or combination of approaches which you think would produce the most interesting and illuminating analysis, and to carry out the analysis.

Be able to critique research on the effects of aging. This will require that you consider the questions under investigation, judge the appropriateness of the research design in light of the possibilities and constraints which the researcher faced, and determine whether or not the conclusions are warranted.

Given descriptions of children's responses in instructional situations, be able to explain their responses and recommend appropriate instructional activities. This will require you to study the situation presented, to consider the theories on development and learning which we've studied, to select the theory or combination of theories which best explain that particular situation, and to create instructional activities in light of your explanation.

Given information about an insect which is making a pest of itself in a certain environment, be able to recommend procedures for controlling the pest. This will require that you decide which features of the environment warrant attention, which characteristics of the insect are relevant, and which procedures for controlling the pest will be most effective, most practical, and most safe.

Be able to organize or critique exhibitions of paintings in the Modern Tradition. This might require you to see possibilities and recognize limitations, given the paintings available; to determine whether such exhibitions should sample all modern art movements or concentrate on selected movements; to decide whether paintings should be organized historically, thematically or in some other fashion; to decide which paintings should be included and which excluded.

Teaching for Complex Problem Solving?

How people go about solving complex problems and how they learn to accomplish such feats remains pretty much a mystery. Research indicates that successful problem solvers approach and think through such problems in very different ways. Thus, we are not very taken with some of the current teaching methods and instructional materials which appear to prescribe problem solving steps and sequences.

Indeed, there's doubt about whether Complex Problem Solving abilities can be "taught" in the same sense that Memorization, Concept Formation and Application can be "taught". Gagne (1980) concludes his discussion of problem solving studies with considerable skepticism that we can design instruction which teaches the selecting and rejecting, weighing and choosing, structuring and restructuring abilities required for Complex Problem Solving. Instead, he suspects that these abilities develop from problem solving experience over a period of time and in a variety of situations. We share these suspicions and offer the following suggestions in light of them.

Provide opportunities for students to wrestle with Complex Problem Solving tasks and situations. If it's true that these abilities develop from experience over time and in a variety of situations, then perhaps professors can promote their development by providing a variety of experiences over time.

Encourage students to write things down as they read the problems. Successful problem solvers report that they jot down key ideas and information, note relationships, write themselves questions, draw diagrams and pictures. Such activities make sense as strategies for pulling out key ideas and restructuring situations. Often students

merely read and reread problems, get lost in their complexities and give up when solutions don't emerge.

Stress that Complex Problem Solving often involves a lot of trial and error. More often than not, students see their professors discuss final versions of solutions or analyses—as if the solutions or analyses emerged in polished forms; as if the key ideas, questions and relationships were self evident; as if professors never felt confused, got stuck, pursued blind alleys, had to start over. If students *expect* that they should be able to produce a solution or an analysis after their first try, they're likely to become discouraged and give up the effort prematurely.

Be available to consult with students as they wrestle with complex problems and situations. There's considerable evidence in the research on student development indicating that many students will find such problems psychologically and emotionally distressing. It's not simply that the problems are difficult or that students lack competence or confidence. In far more fundamental and profound ways, these problems may challenge and disrupt students' views of knowledge, their ways of organizing experience and making sense of the world, their value systems, their relationships with parents, professors, and peers.

Knowing something about the ways in which students perceive these problems at different stages of development may not enable professors to help students solve such problems more successfully. However, the information may help professors "hear" what students are saying, understand why some students react in what appear bizarre or extreme ways, and provide insights about how to provide guidance and support.

Testing for Complex Problem Solving

Testing for Complex Problem Solving involves posing a particular problem or situation and asking students to do something with it—to solve the problem, to analyze the situation, to recommend policies, to make predictions, or whatever. However, descriptions of the requirements for evaluating these abilities are deceptively simple.

Testing for Complex Problem Solving is a challenging task for professor as well as for students.

One part of the challenge to professors lies in finding or creating the problems or situations to be posed. They need to *resemble* "real life" situations in their complexity, their ambiguity and their structure, and often professors can find suitable situations by examining the issues and questions currently asked of or by scholars in their fields.

However, students are not yet scholars in these fields and it's probably not reasonable to expect them to cope with the same complexities. Thus, professors often find they must reshape or recast problems and must rely on experience to judge the level of complexity appropriate for their students.

Judgement is also required in "grading" students' performances on these tasks. Usually, tests of Complex Problems Solving are found in essay questions, paper assignments, or other types of projects, and it's difficult to ensure reliable and fair grading on such forms of evaluation. These difficulties are compounded by the fact that Complex Problem Solving situations usually can be approached in several ways and have a range of acceptable answers of bias ingrading students, performances on these tasks, there's no getting around the fact that judgement plays a prominent role in evaluating Complex Solving abilities.

Selected Bibliography

Anderson, Richard C., and Faust, Gerald W. *Educational Psychology: The Science of Instruction and Learning*. New York: Dodd, Mead and Company, 1973.

Chapter 10, "Concepts and Principles," includes a self-instructional program on information related to these two types of learning. The chapter also includes two interesting sections headed "On learning concepts and principles by discovering them."

Bloom, Benjamin S., Hastings, J. Thomas, and Madaus, George F. *Handbook of Formative and Summative Evaluation of Student Learning*. New York: McGraw-Hill Book Co., 1971.

Although this handbook focuses on how to design tests for various types of learning outcomes, each section begins with a description of the type of learning to be tested. The handbook also includes separate chapters suggesting alternative ways to conceptualize learning in art education (Chapter 17), in science (Chapter 18), in literature (Chapter 20), in a second language (Chapter 22).

De Cecco, John P., and Crawford, William R. *The Psychology of Learning and Instruction*, second edition. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1974.

The following chapters discuss different categories of learning and provide a relatively thorough discussion of the variables which influence each type of learning:

Chapter 8: Conditioning and Verbal Learning, pp. 202-244.

Chapter 9: The Teaching and Learning of Psychomotor Skills, pp. 245-286.

Chapter 10: The Teaching and Learning of Concepts and Principles, pp. 287-323.

Chapter 11: Problem Solving, Creativity, and Discovery Learning, pp. 324-366.

Gagne, Robert M. *The Conditions of Learning*. New York: Holt, Rinehart and Winston, Inc., 1970.

This is, perhaps, Gagne's most thorough and readable discussion of the 8 types of *intellectual skills*: signal learning, stimulus-response learning, chaining, verbal associations, discrimination learning, concrete concept learning, defined concepts and rules, and problem solving.

Gagne, Robert M. and Briggs, Leslie J. *Principles of Instructional Design*. New York: Holt, Rinehart and Winston, Inc., 1974.

In Chapter 2, the authors propose that educational goals may be divided into five categories of learning: (1) intellectual skills; (2) cognitive strategies; (3) verbal information; (4) motor skills; and (5) attitudes. Chapter 3 outlines the conditions necessary for learning the 8varieties of intellectual skills and for learning cognitive strategies. Chapter 4 outlines the conditions for learning information, motor skills, and attitudes.

Gagne, Robert M. "Learnable Aspects of Problem Solving," *Educational Psychologist*, 1980, Vol. 15, No. 2, pp. 84-92.

Lembo, John M. *The Psychology of Effective Classroom Instruction*. Columbus, Ohio: Charles E. Merrill Publishing Company, 1969.

The following chapters are especially relevant:

Chapter 5: The Acquisition of Concepts, pp. 122-135.

Chapter 6: The Acquisition of Principles, pp. 136-153.

Chapter 7: Problem Solving and Creativity, pp. 154-169.

McDonald, Frederick J. *Educational Psychology*, second edition. Belmont, California: Wadsworth Publishing Company, Inc., 1965.

The following chapters are especially relevant:

Chapter 5: Learning and the Cognitive Processes: Concept Formation, pp. 160-199.

Chapter 6: Learning and the Cognitive Processes: Generalizations and Associative Thinking, pp. 200-250.

Chapter 7: The Learning of Problem-Solving and Creative Behaviour, pp. 252-306.

Chapter 8: The Learning of Attitudes, pp. 307-341.

Chapter 9: The Learning of Attitudes: Communication Processes, pp. 342-385.

Chapter 10: The Learning of Complex Performances, pp. 386-419.

Pelz, Donald D. "Environments for Creative Performance Within Universities" in Samuel Messick and Associates, *Individuality in Learning* San Francisco: Jossey-Bass, Publishers, 1976, pp. 229-247.

Pelz reports some of his findings on the conditions required for creative problem solving and speculates on how university professors might nurture creativity.

The Design of Intellectual Experience

Donald L. Finkel and G. Stephen Monk

Sharing experiences with students is essential to learning, but difficult to accomplish. The authors suggest a workshop approach, give a detailed example, and discuss basic principles for worksheet design.

Why Teach?

Beneath the conscious goals and motivations that drive a teacher's daily activities lies a basic human impulse: the desire to share intellectual experiences. Most teachers have felt for themselves the striking pleasure that results from the work of intelligence, whether experienced as insight, beauty, connectedness, or resolution. Ideally, they would like to lead their students to such pleasures; yet, the accomplishment of this ideal is rare.

Few teachers adopt the explicit goal of sharing experience, and those who do must be struck by the difficulty of actively pursuing such an aim. This is not the sort of pedagogic goal about which one's colleagues talk. Moreover, what kind of methods could be formulated for achieving such a personal and insubstantial goal? Too easily, the dimension of experience is ignored altogether, leaving teachers with only the products of their disciplines to present. Yet, it is the processes that lead to these products which yield the intellectual excitement they wish to share. For students to experience such excitement, the formal systems of knowledge must be undone, so that students can feel what it is like to put those systems together for themselves. Thus, *teachers must learn how to convert academic subject matter into activities for*

students. Because it is just these intellectual activities that lead to understanding, the students' gains and the teachers' gratification stem from the same process.

This article will describe a framework for converting formal knowledge into structured activities for students. We shall examine an example and draw from it six principles for designing such activities. This discussion should make concrete the goal of sharing intellectual experience and indicate its benefits to both students and teachers. We must begin, however, by confronting the dilemma which faces any teacher who takes this goal seriously.

The Dilemma of Sharing

Suppose you return home from a trip to Nepal. You are brimming with the excitement of the experience and wish to share it with your friends. Your first inclination is to describe to them in detail all you can about the people, the landscape, and the customs, illustrating your adventures with as many slides as possible. Your first impulse is the *Impulse to Tell*. After several hours of slides and talk, you cannot avoid a conclusion: Since your friends have never experienced anything like Nepalese culture, they cannot possibly get from your description what you feel you are putting into it, or anything like what you got from the trip.

Perhaps it is impossible to tell about important experiences, to give them directly to others. Maybe you should wait until your friends' lives naturally take them to Nepal. Then, when they return, you will finally be able to share the experience. The Impulse to Tell has given way to the *Impulse to Let It Happen*. Following this impulse is not satisfying either, since you may have to wait forever, and you want to share your trip now. Compromises are possible, and you may urge your friends to travel. Yet even if amenable, they will probably experience Nepal quite differently. More likely, however, your urging will awaken a long buried desire in them for travel up the Nile, and then you will be faced with the inevitable evening of Egyptian slides and monologues.

These two opposing impulses. The Impulse to Tell and the Impulse to Let it Happen, are inherent in the attempt to share experiences, and each has the unfortunate tendency to drive you to an extreme. If

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you sense you are telling unsuccessfully, you are likely to tell more and more, and to tell in greater and greater detail. If you withdraw to let something happen, careful to avoid imposing your own experience on others, and nothing happens, then you will withdraw even further to leave a wider arena free for the others' experience. The dilemma of sharing is this: What do you do when you have discovered that neither telling nor refraining from telling is a successful mode of sharing?

Teachers also find themselves caught in this dilemma. In the classroom, the Impulse to Tell leads to lecturing or expository methods of presenting subject matter. The Impulse to Let It Happen is found in various non-directive teaching modes that have arisen in reaction to exposition. We do not oppose these forms in themselves but rather the results that flow from them. Teachers who seek change by following one of these impulses find themselves either expounding in ever more exquisite detail or refining even further the role of non-leader. Since telling does not provide a genuine experience and letting things happen does not produce the particular experience you had in mind, neither of these impulses leads to the genuine satisfaction that comes form sharing an intellectual experience.

Sharing Intellectual Experiences

The solution to the dilemma lies in the intriguing possibility that a teacher can design an experience which has intellectual consequences for students, the very consequences the teacher wished to share in the first place. Our central thesis is that such pedagogic activity is possible and that teachers can best share intellectual experiences by designing them.

This claim immediately raises two questions. What are intellectual experiences and what does it mean to share them? Does going to a Beethoven concert with your friend constitute sharing an intellectual experience? What about watching a football game together? Returning to the previous example concerning the trip to Nepal, you cannot be sure that even bringing your friends with you to Nepal would have satisfied your desire to share the experience. To address these questions, we must distinguish between the external events or objects (the musicians, the musical sounds, the football game, the people of Nepal)

from what we make of them (our perceptions, ideas, interpretations). These mental constructs are what we *use* to interact with the external events; without them we can have no experience. Thus, events in themselves are neither intellectual nor non-intellectual. These terms refer only to the nature of our interactions with events. Interactions may be characterized as more intellectual to the degree that they engage and promote the development of more elaborate and comprehensive systems of ideas. Listening to Beethoven can be non-intellectual depending upon *how* one is listening, while watching a football game might be a most intellectual activity if were part of a comparative analysis of games.

Now, what does it mean to *share* an intellectual experience? Suppose you are listening to a record of a Beethoven quartet with which you are not familiar, and you suddenly become aware of a structural similarity among all of Beethoven's late quartets. Full of excitement, you invite a friend over to hear your new record. You have had an intellectual experience and wish to share it. As you listen to the record together, are you sharing an intellectual experience? It is most unlikely that your friend will make the same discovery you made by just listening to the record. When the record ends you look at your friend expectantly to see if "it happened," and then you recall that for a teacher to merely expose students to archetypal examples is precisely to yield to the Impulse to Let It Happen. It is tempting to think that something fruitful must result from such exposure. After all, how could one read Shakespeare and not be improved by the experience? However, teachers who simply trust in such invisible and delayed effects forgo a sense of direct contribution to their students' understanding. Implicit in the idea of sharing is that we teachers have something valuable to give, not Beethoven or Shakespeare, but ways of thinking about them, ways of understanding and ultimately of interacting with music and words. We would like to give our students the systems of ideas, the perspectives, the concepts that make possible these interactions with music and words. Yet, to adopt such an approach sounds as though we are back to Telling. If only we could collar our students, reach into their heads with a mental hand, and alter their patterns of thought! Once again, we face the dilemma of sharing.

To resolve this dilemma, we must focus on two crucial propositions about these patterns of thought we would like to alter. First, there is no way to interact intellectually with anything in the environment except through such mental patterns. Every student brings some form of conceptual system to new material; the student initially understands the material in the best way he or she can, interpreting it according to his or her present patterns of thought. This proposition is encouraging because it means the teacher is not attempting to get students to elaborate complex theories from nothing. It can also be discouraging, because it means that the teacher must work with students' systems no matter how primitive, fuzzy or ill-conceived those systems may seem when compared to the system the teacher would like the students to develop. The second proposition is that the structure of the system of ideas which engages with an external event will never match perfectly with the structure of the event. One's own mental system will inevitably influence the way one "sees" the event. At the same time, interaction with the event can influence the system of ideas.

It is possible to influence someone else's patterns of thought by means less direct than a mental hand. *The teacher can design an environment, and activities for students within that environment, which will engage their current conceptual systems in such a way that these systems will be induced to develop.* These activities must aim to create a kind of mismatch between internal structure and external event that leads the student to refine, differentiate, and restructure the conceptual system. This approach to teaching is neither Telling nor Letting It Happen. In designing such experiences for students, the teacher must draw upon personal intellectual experiences, but the students will have their own experiences in working through the activities. No one can directly engineer an experience or guarantee the outcome for another person. However, designing focused activities within a concrete environment makes the chances of converging experiences likely, and such a convergence is as close as we can come to sharing.

We thus propose designing intellectual experiences for students as a means for sharing the pleasures of the mind with them. To design, in this sense, is to structure a specific environment for student interaction in order to promote the restructuring of the students' systems

of ideas. We take the goal of conceptual restructuring to be of paramount importance because it is the students' systems of ideas that stay with them and shape their vision of the world. Moreover, it is the act of restructuring such systems which provides the pleasures of intellectual work we assume teachers wish to share with their students.

An Example

The most prominent feature of teacher-designed intellectual experiences, or "workshops" as we call them, is that students work on their own in groups ranging in size from two to seven. The teacher roves from group to group, observing, guiding, questioning, and "teaching," in response to the needs of specific groups or individuals. The students' work is directed by a set of written instructions and questions which we call a "worksheet." Thus, the teacher is present in the students' environment only through the written worksheet and occasional interactions.

The following worksheet is for a college-level workshop in developmental psychology, sociology, or the philosophy of education. The intellectual experience it attempts to share is the understanding that the way one thinks about child development is inextricably linked to one's conception of society. The authors hoped to induce their students to make this connection and to crystallize it by formulating alternative versions of the possible relations between society and the developing child.

There are four parts to the worksheet. As you read them, try to picture a classroom full of students engaged in these activities. Further, try to determine how each part of the worksheet requires a different style of work from the students. Finally, ask yourself these questions: Is the worksheet likely to engage the students' current patterns of thought about development and society? Is it likely to result in a restructuring of the students' ideas on this topic?

Eloise and the Philosophers

There are four parts to this workshop. Part I is to be performed in pairs. Parts II and III are to done in groups of six, formed by combining

three of the previous partnerships from Part I. Part IV will be completed with the class together as a whole.

Part I *Eloise is an 11-year-old girl who has decided to keep a diary during her sixth-grade year, which she has just begun. You will find attached the first entry in her new diary, written during the lunch hour of the first day of school. After reading the entry [which appears below, after Part IV], agree on and write down the answers to the following five questions.*

1. List the five different activities in which Eloise participated during her morning.
2. For each activity, describe what you think were the teacher's underlying goals (or strategies) in having the children participate in such an activity.
3. Now consider that the school and its teachers are primarily agents of society, and that *one* of society's tasks is to employ the school to affect children's emotional and intellectual development in such a way that they are prepared to enter society and be useful members. Then each of Eloise's activities can be viewed as meeting society's goals well or badly, but *on two levels:* on the level of *content* (fractions, writing skill, ecology, etc.) and on the level of *form* (the way the activity is organized.) Ignoring the content of Eloise's morning, describe how society is affecting her through the form of each of the activities. Why is each activity structured the way it is?
4. Note the basic similarities and differences among the five activities, based upon your responses to question 3. Overall, do the forms of the different activities tend to be consistent with each other, or inconsistent?
5. What are some different ways to view the possible relationship between the developing child and society? List at least three different relationships.

Part II *Form groups of six by combining three partnerships. Each group should choose a scribe to keep a written record of results. The group will be given a set of 14 index cards, each with a quota-*

tion on it. [See below for example]. These quotes are from philosophers and educators, old and new.

1. Each quote implies a certain relationship between the developing child and society. Sort the quotes into a small number of categories (between 3 and 5) that reflect the differing relationships. Try to agree on the groupings.
2. Formulate and agree upon descriptive labels for each of your categories.

You will probably have to go back and forth between questions 1 and 2, sorting some cards, deciding upon a tentative label, and re-sorting some of the original cards. If you cannot reach agreement, record minority opinions.

Part III *Remain in the same group of six.*

1. Together with your original partner from Part I, share your answers to Part I, question 5, with the group. Compare these answers to the categories your group devised in Part II. Did categorizing the quotes alter your original views significantly? If so, in what ways? Compare the effects of Part II on your views with its impact on other partnerships in your group, and have the scribe record general trends.
2. Using your current set of categories from Part II, your group should place each of the following systems into the appropriate category.
   (a) Summerhill (as seen in the film last week),
   (b) the school you are now attending,
   (c) the way your parents treated you (in general),
   (d) the way you intend to treat your children,
   (e) today's workshop

Part IV *The class will reassemble as a whole. We will hear the results of each group's work from the scribes, and then discuss the entire exercise.*

Eloise's Diary

Dear Diary: It was great to get back to school and see my friends again, especially Susan. Before the bell rang, I told her all about our

summer trip to Mexico, and about Manuel, and our trip to the beach together. This year I got Mrs. Morgan. She's okay, but I wanted Mr. Brown. Susan's so lucky she got him! After attendance the first thing we had to do was write a paper about what we did over summer vacation. Why do teachers always give that dumb assignment? Well, I wrote about Mexico City, and the market place, about all the things you can buy there. Some people read their papers out loud, but I didn't. Then we had math. Mrs. Morgan explained about multiplying and dividing fractions. We had all that stuff last year, but no one seems to remember it. Even Mrs. Morgan made a mistake at one point! Of course, everybody loved that. We learned a little poem, so we know when to flip the fraction upside down, and when not to. (I forgot the poem already! I never was good in math!!) Then we saw a movie about a lake in Africa—like the ones on TV. Mrs. Morgan said for science we are going to learn a new thing called *ecology*. The first thing we had to do was list all the animals we saw using the lake and tell how they used it. Then Mrs. Morgan asked us what would happen to all the plants and animals if the hippos got killed and could never bathe in the lake. Richard said there would be a lot of dead hippos around and the whole class laughed. Richard's so dumb! But Mrs. Morgan wouldn't tell us the answer, even after we tried. Then we had gym. I love gym, but Mr. Brown's class creamed us in volleyball. If only I could get those creeps in our class to set up the ball, I'm sure we could win. When we got back, there was a policeman waiting in our room. Everyone was excited for a minute, but it turned out to be a lecture on drugs. He showed us all these pills and needles and stuff and said it was all bad. Borrring! Now it's lunch time. Oh, here comes Susan—see you tonight. Diary.

Sample Quotes

[We include the following three quotations to give the reader of this article a flavor of the quotations used. We have chosen three rather extreme cases, but the full group of 14 index cards presents a formidable task of differentiation and categorization.]

"Give your scholar no verbal lessons; he should be taught by experience alone; never punish him, for he does not know what it is to do wrong;....May I venture at this point to state the greatest, the most important, the most useful rule of education? It is: Do not save time, but lose it.
"Having thus very early set up your Authority, and by the gentler Applications of it, shamed him out of what leads towards any immoral Habit...(for I would by no means have chiding used, much less Blows, till Obstinacy and Incorrigibleness make it absolutely necessary)..."

"What is the least that we can say about an organism's development? Everybody admits that two things must be said: First, it develops by getting habits formed; and second, it develops by getting new adaptations which involve the breaking up or modification of habits."

To appreciate the experiential flavor of the workshop, you should now switch gears and actually *do* the problems which make up Part I. Readers usually tend to resist becoming more active in this way, but you will sense the power of this approach only if you overcome this resistance.

Principles of Design

The most striking quality of this worksheet on first reading is its variety. The students work in pairs, groups, and as a whole class. They read the imaginary diary of a sixth grader and later classify quotes from philosophers. In addition to reading and sorting cards, they must express themselves to classmates, argue for their views, and reflect upon their own experiences. In order to reveal the orderly design within this apparent kaleidoscope of educational activities, we must bread down the overriding goal of workshops into a set of interlocking principles. Recall that the teacher's goal is to convert an intellectual product into a sequence of activities for students. The six principles that follow will suggest how such a conversion may be facilitated and will illustrate why the authors of the previous worksheet designed it as they did.

A worksheet must always set forth an environment, and activities for students in that environment, which engage their current conceptual systems in such a way that these systems will be induced to develop. We will first examine the nature of that *environment*, then describe the structure of the *activities*, and finally discuss the resulting role of the *teacher*. Our six principles emerge from the discussion of these three elements of workshops. They are italicized in the text and summarized in a list at the end of this section.

Environment. The student's environment in a workshop has two chief components: an external shared event and the other students in the group. The external event can take many forms; in the above example it was Eloise's diary and then the quotes on index cards. Whatever the form, *the event must be specific, concrete, and present.* These features are required to engage effectively the students' conceptual systems. Any material (texts, data, graphs, journals) with which the students are going to work must be ready at hand in manageable quantities. The material must be sufficiently challenging to engage the students at diverse levels of sophistication, but not so complicated as to overwhelm them.

The group of students working together on a worksheet provides a second aspect of the environment. Students can help one another in a number of ways: They can provide mutual support and a sense of common purpose; their exchanges can promote the externalization and articulation of ideas; finally, the diversity of points of view provides a continuing source of puzzlement and constructive friction. This last feature of group work propels the card sorting task in *Eloise*, while externalization and clarification of ideas lies behind the use of partnerships in Part I, the analysis of the diary. The teacher designing a workshop must think through these issues in advance in order to *exploit consciously the collective potential of the group.* Such devices as requiring agreement, fostering debate, inviting exchange of work, and assigning specialized roles use the group productivity. With whatever techniques you use, your instructions must implicitly communicate your trust in your students' capacity as a group and your genuine expectation that together they have the resources to complete the task.

However, simply to place your students on their own in groups to explore a stimulating event is insufficient. Beyond the group and the event, a third aspect of the environment is required. *Specific questions and instructions must be written in advance and given to each student.* These questions and instructions constitute the worksheet itself. Sometimes the activities required will not be clear unless they are written. Even when the instructions could be communicated orally or on the board, it is important to distribute them to each student. With the worksheet at hand, the students can interact directly with the event and each other without the need for the teacher's constant personal mediation. These written questions and instructions embody the teacher's wisdom on the subject, yet in this form, they permit the students to take the initiative.

Activities. A great deal of activity can be generated by placing students in an environment that contains concrete events, other students, and specific written questions about these events. However, student activity in itself is not our goal. We wish to induce intellectual change in order to allow the sharing of intellectual experience. To effect intellectual change, the activity must have a particular structure. This structure may be summarized by saying that *every worksheet requires the students to solve a problem.*

The best way to alter someone else's thought is to provide a problem which cannot be solved with his or her present conceptions. This requires a three-phase process. First the student must be made to see the problem as a genuine problem that is disturbing and requires resolution. Such a problem must be formulated from the student's own view of the phenomenon. Thus, the first phrase requires *activities which elicit the student's current mental structures.* People always have common-sense concepts, intuitions, or general rules-of-thumb for exploring anything new. These are what must be elicited by the first phase of the worksheet, because it is only from these mental constructs, that intellectual change can proceed. The problem itself only comes into consciousness as a result of *questions that force upon the student the inadequacy of his or her present conceptions.* This is the worksheet's second phase. It must throw the student into a state of intellectual disequilibrium. Conflict between obdurate phenomena

and unsophisticated theories must make the student feel the problem in all of its perplexing force, and lead him or her to want to solve it.

It is not enough to perplex students and leave them hanging. Relevant information, guides, questions, and examples must be provided so that the students have a reasonable chance of making new distinctions and typing ideas together in a different way. *Activities which lead to intellectual restructuring* mark the third phase, which should result in the creation of a new mental equilibrium. The teacher must strike a balance between withholding too much information, on the one hand, and giving out a pre-packaged solution, on the other. Repeated experience in workshops watching students restructure their ideas will guide most teachers to this balance.

In *Eloise*, the single problem which organizes the activities is this: How can we describe the system of mutual implications between views of child rearing and conceptions of social organization? As a question this is very abstract and is unlikely to lead to a productive discussion. With this problem serving as a focus, the teacher must ask: What activities or tasks would be most likely to lead students to understand these implications? In this case, the authors decided to use a categorizing task. By articulating different ways in which a view of child development contains a conception of society (or vice versa), students will be forced to make distinctions and ask questions that are new to them. The workshop now has a central activity, one that will constitute the second phase (disequilibrium) of the three-phase structure. Sorting quotes almost inevitably reveals the inadequacy of students' intuitive views about children and society and may well produce intellectual conflict as the students argue over which cards belong in which piles and why. Indeed, the card sorting is the center of this workshop, and will perplex students and challenge their current thinking.

However, to present the student with fourteen wordy quotes with no preparation might well throw them too far off balance. First, they need to have their own ideas about children and society elicited in a more familiar and concrete context. The questions about Eloise's diary fulfill this function. By the end of Part I, the students' own ideas should have been articulated, clarified, and written, so they can face the test of the card sorting.

If the workshop were to end after Part II, the students would have only their own shaky products, the set of categories, which might well seem *ad hoc* and of little significance. The students now need to use the categories, applying them to phenomena to see if they shed new light. In addition, they need to bring their ideas into the public arena of the class to present them to their peers and teacher. Parts III and IV of *Eloise* address these needs; they supply the resolution and closure to the experience. Certainly a total restructuring of ideas will not occur as a result of *Eloise*, but a first step will be made in the process. After the groups have compared their categories in Part IV, they will try to resolve their differences though synthesis in the ensuing discussion. Their original ideas (e.g., about free children and harsh societies) will have been shaken, and they will be on their way toward a more refined and complex system of ideas.

In all this it is important to remember that, intellectual or otherwise, *a genuine experience has a style and a texture* as well as an organization. Matters of rhythm and timing must not be neglected. Moreover, it is essential that the worksheet not speak to the students in a voice that is didactic or pedantic; it should speak in the author's natural voice. The finished worksheet should bear the teacher's personal stamp, reflecting a sense of play and purpose. *Eloise* requires students to shift activities repeatedly: It does not try to exhaust the meaning contained in any one source; it progresses, allowing for student work in new modes and in new combinations. The authors attempt to write in the style of a sixth grade girl and provide physical props, the cards with quotes, so that some of the action can be physical. The important point to remember when you are composing a worksheet is that students will actually be doing the things you ask of them, and you must try to envision what it would be like to experience the activities you are designing.

Teacher. In writing a worksheet you have provided a blueprint for an experience. By working backwards from the products of your discipline to activities for students, you have drawn on some of your most creative an pedagogic impulses. Yet your presence at the workshop itself will still be necessary, both to facilitate the students' interaction with the worksheet and to give you the necessary information upon which to base future worksheets. However, your role will

be quite different from that of the conventional teacher. Most teachers are held captive by the need to continually direct and organize the activities of the class. The students' attention is almost always focused on the teacher. He or she is bound in place by the students' conviction that the teacher is the vital link between themselves and the subject matter. This traditional role puts the teacher at the hub of the wheel, the common source of support and cohesion. In contrast, the teacher's role in the workshop may be summarized by the phrase: *The teacher is there, but out of the middle.*

In a workshop, it is the worksheet, and not you, which provides the "carrying energy" for the students' work. They are in direct contact with the material and one another, so that you remain outside of their immediate experience. This is just what you need in order to be free to move around and respond to groups of students in a flexible fashion, tailoring your contribution to the needs of the moment. No matter how exquisitely you have designed your worksheet, some students will become stranded in irrelevant details, while others will skim over all that is interesting. Still other students will approach the problem from a point of view you never imagined. All of these students, and many others as well, will benefit from direct interaction with you. As you engage them, getting them started again, deepening their approach or leading them to a new angle of attack, you will feel the most immediate gratification of the sharing of intellectual experiences.

To Summarize, the six principles of design are the following:

Environment:

1. The shared event must be specific, concrete, and present.
2. Specific questions and instructions must be written in advance and given to each student.
3. The teacher should exploit the potential of the group.

Activities:

4. The worksheet must have within it an underlying problem to be solved. To make the problem genuine and solvable requires activities which:
   (a) elicit current mental structures;
   (b) point to the inadequacy of present structures;
   (c) lead to intellectual restructuring.
5. The workshop must have the texture of a genuine experience.

Teacher:

6. The teacher is there, but out of the middle.

Diverse Applications

We cannot convey in this brief article the variety of forms that workshops and worksheets may take. The interested reader should refer to our more complete treatment of the subject[1] where numerous examples are given, as well as more detailed guidelines for designing workshops. To suggest this variety, we present here several examples of workshops written by us, and our colleagues. Many of these have been composed in collaboration, because we have found that the most effective method of converting intellectual products into activities is for an expert in the subject to join forces with an intellectually inquisitive but naive partner.

1. Hot Tips: An exercise that starts with graphs of the prices of four stocks and moves toward an understanding of rate of change at a point—used in a calculus course for social science majors.
2. The Ideal Gas Law: A reconstruction of the Ideal Gas Law in chemistry, which starts with questions about balloons and pistons, and progressively builds toward an understanding of the regularities stated mathematically in the law—used in an introductory chemistry course.
3. Examination of Assumptions: An exercise in philosophical analysis, based on the extraction of assumptions in a fellow student's written argument, and using several written exchanges between the two partners—used in an introductory philosophy course.
4. How Children Form Mathematical Concepts: A set of questions used to help students digest a *Scientific American* article read prior to the workshop and brought with them to class — used in an advanced developmental psychology course.
5. The Problem of Identity in "A View From the Bridge": An exercise in applying to the characters in a play a psychological concept previously studied, based on the students' re-creation of each character's point of view in a closing monologue—used in an interdisciplinary social science and humanities course.

Workshops can fulfill quite a variety of functions within a course. The following is a partial list.[2]

1. Have students parallel the work of an author before reading about that work.
2. Help students gather and organize a wealth of detailed and confusing information.
3. Articulate an intellectual structure by providing a shift of context.
4. Give practice translating between languages within a discipline to show the power of a new language.
5. Help students crystallize their knowledge in preparation for a test.
6. Let students experience physically something they have studied or will study more abstractly.

Conclusion

We began by addressing a question all teachers must eventually face: Why teach? We have ended with a proposal for improving instruction, a response to the question: How can I improve the learning that takes place in my class? We believe that these two questions are inextricably linked. Many teachers are quick to make superficial changes in their courses, employing new curricular packages, new kinds of tests, and new texts, in the hope of improving their students' education. We are proposing an alteration in the very structure of the teacher's experience with students. To suggest such a step would be futile without addressing a teacher's most basic needs and hopes. We focused on the goal of sharing intellectual experiences because we have found in our own collaboration with numerous teachers that it is precisely this consequence of designing and running workshops that is so gratifying and sustaining. Calling for such broad and unspecified goals as "significant educational change" or "faculty development" strikes us as unproductive because such sweeping appeals do not address teachers' immediate desires. Teachers don't want to "develop"; they want to have intellectual exchanges with their students in a way that lets them see their students' progressive understanding . We have proposed one way of creating such exchanges, one that we

believe *is* a significant educational innovation, and one that *does* result in development— for students and for teachers, too.

We have listed elsewhere[3] the detailed benefits to students and teachers of this workshop approach. Here we can only summarize by saying that virtually all college students with whom we have worked have thrived in workshops. Because their teachers have removed themselves from "the middle," they have been able to apply their own intellectual powers to concrete problems, thus gaining an awareness of and a confidence in their own intelligence. Moreover, because their teacher's expertise has not been withheld, the students have felt neither abandoned nor manipulated. Able to interact with an environment constructed by their teacher and to work together in a collaborative atmosphere with their peers, they have made conceptual advances that have altered their mental landscape.

One of the dramatic consequences for teachers who write worksheets first and run workshops based on them is their strikingly sharper view of the effects of their pedagogical thinking on students. Having completed the intellectual work before the workshop, teachers can then see more clearly the quality of their students' thinking. Such a vantage leads to a ready understanding of how better to design the next workshop. Moreover, in having to work backwards from the intellectual products of their discipline to the activities that lead to them, teachers find they have to rethink many fundamental questions in their field. Their own intellectual excitement in this process parallels the students' enthusiasm in accomplishing the workshops. And within this interactive cycle occurs the genuine sharing of intellectual experience.

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[1]Finkel, Donald L. and Monk, G. Stephen. *Contexts for Learning: A Teacher's Guide to the Design of Intellectual Experience*. Olympia, WA: The Evergreen State College, 1978.

[2]See Finkel and Monk, *Contexts for Learning*, pp. 38-43 for amplification.

[3]Finkel and Monk, *Contexts for Learning*, pp. 99-108.

The Dreaded Discussion: Ten Ways to Start

Peter Frederick

> The only privilege a student had that was worth his claiming, was that of talking to the professor, and the professor was bound to encourage it. His only difficulty on that side was to get them to talk at all. He had to devise schemes to find what they were thinking about, and induce them to risk criticism from their fellows.
> - *The Education of Henry Adams*

The conspiracy of silence is breaking up: we are learning to talk more openly about our joys and fears as teachers, our achievements and frustrations in the classroom. As I have listened to my colleagues talk about their students and their classrooms, the one fear and frustration mentioned more than any other, as for Henry Adams, was in leading a discussion. No matter how many articles on technique we read, or workshops we attend, the dreaded discussion continues to bother us more than any other part of our daily teaching lives. Freshman seminar and discussion-based core programs continue to develop. Pressures not only to "do more discussion" but to do it well, reinforced by student evaluations and faculty development centers, do not go away. We are learning, alas, that to walk into class and hold up one's copy of the assigned text, asking, "how'd you like it?" does not necessarily guarantee an enthusiastic, rewarding discussion.

We need, first of all, to acknowledge our fears in facing discussion classes: the terror of silences, the related challenges of the shy and dominant student, the overly-long dialogue between ourself and one combative student, the problems of digression and transitions, student fear of criticism, and our own fear of having to say "I don't know."

Worst of all, perhaps, is the embarrassment of realizing, usually in retrospect, that "about half way through the period I lapsed, *again*, into lecture." I suspect that our fears about discussion (and our lapses) have a great deal to do with the issue of who controls the classroom. Although psychologically rooted, the control issue is best dealt with as a nitty-gritty practical question of how to plan and how to begin.

My first assumption is that an effective discussion, like most anything, depends upon good planning. The content goals for any given class period usually suggest employing different teaching strategies. We would like to be able to select form among many discussion possibilities with confidence. The purpose of this article is to expand the range of our options by describing very precisely several different ways of starting a discussion. Like Henry Adams, we "devise schemes" to find out what our students are thinking.

My particular schemes are guided by the following assumptions and principles about discussions:

- because we have much to learn from each other, all must be encouraged to participate
- it is important to devise ways in which each student has something to say, especially early in the class period
- students should be expected to do some (often highly structured) thinking about a text or issue before the discussion class begins
- students should know and feel comfortable with each other and with the teacher. As Carl Rogers and others keep reminding us, learning is aided perhaps most of all by the quality of personal relationships
- those relationships are enhanced by a climate of trust, support, acceptance, and respect: even "wrong" answers are legitimate
- a student's self-image is always affected by his or her participation in discussions: feedback, therefore, is crucial for self-esteem
- the primary goals in any discussion is to enhance the understanding of some common topic or "text" (in the broadest sense)
- different kinds of texts, purposes, and faculty teaching styles suggest using different kinds of discussion schemes.

My hope and expectation is that other teachers will adapt these suggestions and devise schemes for their own texts, purposes, and teaching styles.

(1) GOALS AND VALUES TESTING: The students are asked to pair off and decide together what they think of the primary value of the particular text for the day, and how their consideration of it meshes with course goals. "Why are we reading this?" "Why now?" After five minutes or so, invite reactions. It is not necessary to hear from each pair, but hearing from a few provides a public reality test for the teacher's course goals ("is this text serving the purpose I had hoped it would?"), as well as providing a mutual basis for further probing into the text. An alternative initial question for the pairs is to ask for a list of relationships (comparisons and contrasts) between this text and another, usually the most recent one. Make the instructions explicit: "identify three themes common to both texts" "suggest the two most obvious differences between the two texts" "which did you like best and why?" "make a list of as many comparisons (or contrasts) as you can in ten minutes." In this case, in order to benefit from the richness of diversity, as well as to confirm similar insights, it is probably best to check in with each pair.

(2) CONCRETE IMAGES: It is obvious, of course, that discussions go better when specific references are made. Yet I think we often need help remembering the content of our text. A few minutes at the beginning can guarantee that the sophisticated analysis we seek will be based on specific facts. Go around the table and ask each student to state one concrete image/scene/event/moment from the text that stands out. No analysis is necessary—just recollections and brief description. As each student reports, the collective images are listed on the board, thus provides a visual record of selected content from the text as a backdrop to the following discussion. Usually the recall of concrete scenes prompts further recollections, and a flood of images flows from the students. A follow-up question is to invite the class to study the items on the board, and ask: "what themes seem to emerge from these items?" "what connects these images?" "is there a pattern to our recollected events?" "what is missing?" This is, obviously, an inductive approach to the text. Facts precede analysis. But also, everyone gets to say something early in class and every contribution gets written down to aid our collective memory and work.

(3) GENERATING QUESTIONS: We have our own important questions to ask about a text. And we should ask them. But students

also have their questions and they can learn to formulate better ones. Being able to ask the right questions about a particular text may be the first way of coming to terms with it. There are many ways of generating questions:

A. Ask students ahead of time (Wednesday for Friday's class) to prepare one or two questions about their reading. One can vary the assignment by specifying different kinds of questions: open-ended, factual, clarifying, connective and relational, involving value conflicts, etc.

B. As students walk into the classroom ask them to write down (probably anonymously early in the term) one or two discussable questions about the text. "What questions/issues/problems do you want this group to explore in the next hour about this reading?" Hand all questions to one student (a shy one, perhaps) who, at random, selects questions for class attention. Do not expect to get through all of them, but the discussion of two or three questions usually will deal with or touch on almost every other one. Students, like all of us, ask questions they really want to answer themselves, and they will make sure their point is made somehow.

C. Same as B, except the teacher (or a student) takes a minute or two to categorize the questions and deals with them more systematically.

D. Ask each student to write down one or two questions (either ahead of time or at the start of class), but in this case the student owns his/her question and is in charge of leading the discussion until he/she feels there has been a satisfactory exploration of the issues. Start anywhere and go around the table. This obviously works best in smaller groups with longer periods than 50 minutes.

E. Divide the class into pairs or small groups and charge each group to decide upon *one* salient question to put to the rest of the class.

(4) FINDING ILLUSTRATIVE QUOTATIONS: We do not often enough go to the text and read passages out loud together. Students, we are told, do not know how to read any more. If so, they need to practice and to see modeled good old-fashioned *explication de text.* Ask each student, either ahead of time or at the start of class, to find one or two quotations from the assigned text that he/she found particularly significant. There are many ways in which the instructions

may be put: "find one quotation you especially liked and one you especially disliked." Or, "find a quotation which you think best illustrates the major thesis of the piece." Or, "select a quote you found difficult to understand." Or, "find a quotation which suggests, to you, the key symbol of the larger text." After a few minutes of browsing (perhaps in small groups of three to four), the students will be ready to turn to specific passages, read out loud, and discuss. Be sure to pause long enough for everyone to find the right spot in their book: "starting with the middle paragraph on page sixty-one—are you all with us?" Lively and illuminating discussion is guaranteed because not all students will find the same quotations to illustrate various instructions, nor, probably, will they all interpret the same passages the same way. It is during this exercise that I have had the most new insights into texts I had read many times previously. And there may be no more exciting (or modeling) experience than for students to witness their teacher discovering a new insight and going through the process of refining a previously held interpretation. "Great class today! I taught Doc Frederick something he didn't know."

(5) BREAKING INTO SMALLER GROUPS: No matter the size of a class, sixty or six or one hundred and sixty, it can always be broken down into smaller groups of four, five, eight, fifteen, or whatever. The purpose, quite simply, is to enable more people to say something and to generate more ideas about a text or topic. Also, groups lend themselves usually to a lively, competitive spirit, whether asked to or not. We are interested not only in the few people we are grouped with but also in "what they're doing over there." Furthermore, reticent students often feel more confident in expressing themselves in a larger group after they have practiced the point with a safer, smaller audience. There are three crucial things to consider in helping small groups to work well. First, the instructions should be utterly clear, simple, and task-oriented. Examples: "Decide together which of the brothers is the major character in the novel." "Which person in the *Iliad* best represents the qualities of a Greek hero? Which person, the same or different, best represents a hero by your standards?" "Why did the experiment fail? What would you suggest changing?" "Identify the three main themes of this text." "What is Picasso's painting saying?" "Identify three positive and three negative qualities of King David's

character." "What do you think is the crucial turning point in Malcom's life?" "If you were the company treasurer (lawyer), what decision would you make?" "Generate as big a list as you can of examples of sex role stereotyping in these first two chapters." "If you were Lincoln, what would you do?" In giving these instructions be sure to give the groups a sense of how much time they have to do their work. Second, I believe in varying the ways in which groups are formed in order to create different sized groups with different constituencies. Pair off ("with someone you don't know") one day; count off by fives around the room another; form groups of "about eight" around clumps of students sitting near one another on a third day. And third, vary the ways in which groups report out when reassembled. Variations include:

- each group reports orally, with the teacher recording the results (if appropriate) on the board
- each group is given a piece of newsprint and felt pen with which to record its decision, which are then posted around the room
- space is provided for each group, when ready, to write their results on the blackboard
- each group keeps notes on a ditto master, which the teacher runs off and distributes to everyone for continuing discussion the next meeting
- no reporting out is necessary, or reactions are invited from the several groups, but not necessarily from all of them.

Further possibilities for small groups are described in the suggestions that follow:

(6) GENERATING TRUTH STATEMENTS: This exercise develops critical skills and generates a good deal of friendly rivalry among groups. The instructions to each group are to decide upon three statements known to be true about some particular issue. "It is true about slavery that ..." "We have agreed that it is true about the welfare system that ..." "It is true about international politics in the 1950s that ..." "We know it to be true about the theory of relativity that..." And so on. I have found this strategy useful in introducing a new topic—slavery, for example—where students may think they already know a great deal but the veracity of their assumptions demands examination.

The complexity and ambiguity of knowledge is clearly revealed as students present their truth statements and other students raise questions about or refute them. The purpose of the exercise is to develop some true statements, perhaps, but mostly to generate a list of questions and of issues demanding further study. This provides an agenda for the unit. Sending students to the library is the usual next step, and they are quite charged up for research after the process of trying to generate truth statements.

(7) FORCED DEBATE: Although neither one of two polar sides of an issue obviously contains the whole truth, it is often desirable to force students to select one or the other of two opposite sided and to defend their choice. "Burke or Paine?" "Booker T. Washington or W.E.B. Du Bois?" "Are you for or against achieving racial balance in the schools? "Should Nora have left or stayed? "Who had the better argument: Creon or Antigone?" "Capitalism or Socialism for developing nations?" Once students have made their choice, which may be required prior to entering the room for class that day, I ask them to sit on one side of the table or room or the other to represent their decision. Physical movement is important and sides need to face each other. Once the students have actually, as it were, put their bodies on the line, they are more receptive to answering the question: "why have you chosen to sit where you are?" Inevitably, there may be some few students who absolutely refuse (quite rightly) to choose one side or the other. If they persist, with reasons, create a space for a middle position. This adds a dimension to the debate and, as in the case of deciding between Burke and Paine on whether or not to support the French Revolution, those in the middle find out what it is like to attempt to remain neutral or undecided in heated, revolutionary times. I also invite students to feel free to change their place during a debate if they are so persuaded, which adds still another real (and sometimes chaotic) aspect to the experience.

(8) ROLE PLAYING: This is a powerful learning strategy, guaranteed to motivate and animate most students and to confuse and make nervous many. Role playing is tricky. It can be as simple (deceptively so) as asking two members of the class to volunteer to adopt the roles of two characters from a novel at a crucial point in their relationship discussing how they feel about it, or what they should do next. Or two

students can act out the President and an advisor some decision, or two slaves in the quarters at night discussing whether or not to attempt to run away, or a male and female (perhaps with reversed roles) discussing affirmative action or birth control. Issues involving value conflicts, moral choices, and timeless human dilemmas related to the students' world usually work best, but role playing need not be so personal. A colleague of mine in biology creates a student panel of foundation grant evaluators, before whom other students present papers and make research proposals. Or, as students walk into class and sit down, they find a card in front of them which indicates the name of a character from a novel, or an historical personage, or even a concept. For the discussion that follows they are to *be* the role indicated on their card. Knowing this might happen is not a bad motivator to make sure students get their reading done.

Any situation involving multiple group conflicts is appropriate for role playing. There are many simulation games for contemporary issues in the social sciences. But for history, I like to create my own somewhat less elaborate "games," putting students into the many roles represented in some historical event or period. One of my favorites is a New England town meeting in 1779, in which a variety of groups (landed elite, yeoman farmers, Tory sympathizers, soldiers and riff-raff, artisans, lawyers and ministers, etc.) are charged with drafting instructions for delegates to a state constitutional convention. Another is to challenge several groups in 1866—defeated Confederates, southern Unionists, northern Radical Republicans, northern moderates, and Black freedmen—to develop lists of goals and strategies for accomplishing them. I play an active role, as moderator of the town meeting or as President Johnson, organizing and monitoring the interactions that follow group causes. Our imagination can create many appropriate examples for role playing. You have, I am sure, your own.

But because role playing can be traumatic for some students and because a poorly-planned or poorly-monitored role play can get out of control, I want to make a few cautionary suggestions that I have found helpful, if not crucial. First, except for finding the cards at the beginning of class which compel playing a role, in most role playing activities students should have some choice in how much to participate, either by deciding whether or not to volunteer or by being part

of a group large enough reduce the pressures on any one individual. Teachers should monitor carefully the unspoken signals of students who may find their role uncomfortable, and intervene, often by skillfully pursuing their own role, to extricate or reduce the pressures on an actor. Generally, however, I have found role playing to be an effective way for the normally shy student, who has said little or nothing in class, to unblock in the new role and participate more readily in conventional discussions afterwards. Second, give students some time (how much depends upon the nature of the particular role play) to prepare themselves for their role. This might mean two days or more in order to do some research, or fifteen minutes in groups to pool information, or five minutes to refresh one's memory about a character in a novel, or a couple of minutes simply to get in touch with the feelings of a character and situation. Third, in giving instructions the definition of roles to be played should be concrete and clear enough for students to get a handle on who they are playing, yet open enough for the expression of their own personality and interpretation. If the roles are prescribed too clearly, students merely imitate the character described (although sometimes this *is* the requirement) and have difficulty going beyond it with anything of themselves. If the roles are described too loosely, without a clear context, students will stray too far from the actual situation to be experienced and learned. And finally—and most importantly—in any role play experience as much (if not more) time should be devoted to debriefing afterwards as for the exercise itself. This is when the substantive lessons of the experience are discovered, explored, and confirmed. This is when those students who may have served as observers will offer their insights and analysis of what happened. Above all, this is when the actors will need an opportunity to talk about how they felt in their roles and what they learned, both about themselves and about the substantive issues involved.

(9) NON-STRUCTURED SCENE-SETTING: Most of the ways of starting a discussion described thus far involve a great deal of structure and direction. But inevitably, when teachers suspect that they have been dominating too much ("I blew it again—talked most of the hour!"), it is clearly time to give students an opportunity to take a discussion in *their* directions, and to do most, if not all, of the talking.

The teacher, however, has a responsibility for setting the scene and getting class started. There are a variety of ways to do this, some more directive than others. Put some slides on a carousel and without a word, show them at the beginning of class. Or, as the students walk into the classroom, the teacher plays a piece of music or a speech on a tape recorder. Or, on the board before class the teacher writes a quotation or two, or two or three questions, or a list of words or phrases or names, or even an agenda of issues to be explored. The only necessary verbal instructions are to make it clear to the students that until a defined time (perhaps the last five minutes) you, the teacher, intend to stay out of the discussion entirely. Even having said that, I have still found that I am capable of breaking my own contract and intervening or, more likely, affecting the class by non-verbal signals. I tell my students that I find it extremely difficult to stay uninvolved, and that I need their help in making sure I stay out of the discussion. They are usually happy to oblige. If possible, adopt an utterly non-evaluative observer role and take descriptive notes back to the students may be the most helpful feedback you can give them.

(10) A TENTH WAY TO START: As the term progresses students will have experienced many different exciting ways to start a discussion, most of which, we hope, enhance their understanding of a text or issue. Once the expectation of variety has been established, there is even a legitimate place for the following strategy: stroll into class with your book, sit on the edge of the table, hold the book up, and ask: "how'd you like it?"

Although it has not been my primary purpose in this article to extol the many values of discussion, I assume that my bias has been implicitly clear. The key to effective retention of learning, I believe, is in owning the discovery. Emerson wrote in his journals that a wise person "must feel and teach that the best wisdom cannot be communicated (but) must be acquired by every soul for itself." My primary strategy as a teacher is to structure situations in which students have has many opportunities as possible to acquire wisdom for themselves; that is, to own the discovery of a new learning insight or connection and to express that discovery to others. In this way their substantive learning is increased and their self-esteem is enhanced. How we plan the start of class is crucial in achieving this goal. "Hey, roomie, I now

know what Emerson meant by self-reliance. What I said in class about it today was that..." Which translated means: "Hey, I'm OK, I understand this stuff. I said something today others found helpful." Which translated means: "class was good today: he let me talk."

Teaching With Charisma

James D. Milojkovic

> Whether and how far the capacity for imagination can be stimulated by higher education, I do not know. I am quite sure however, that it can be dulled, even killed by overemphasis on the importance of information and discipline. Yet without discipline, no skills can be acquired. And without a solid respect for facts, imagination degenerates into empty phantasy....
>
> The crucial question is ... how to encourage discipline without strifling imagination.
>
> Philip K. Rhinelander
> Professor of Philosophy Emeritus

Although research on teacher effectiveness has been carried out for more than 60 years, few consistent relationships have been established between teacher variables and effectiveness criteria (Doyle, 1977). While this effort continues, my purpose here is to suggest that a new approach to studying teacher effectiveness and an answer to Rhinelander's "crucial question" can be found by focusing on the nature and development of charismatic teaching. The underlying assumption of my approach is that the essence of highly effective teaching does not constitute a mystery understood by only a few "born" teachers. I believe that an analysis of the qualities of charismatic teaching will shed new light on the teaching process and provide the basis for new teacher training techniques for higher education.

Cold Cognition vs. Hot Cognition

Recently, Snow, Federico, and Montague (1980a, 1980b) edited two volumes on the progress of cognitive analyses in education. In reviewing these volumes Baron (1981) concluded:

> The work in these volumes ... seems to assume that the purpose of instruction is to teach specific skills and knowledge, such as arithmetic. The uses of instruction to teach general styles and strategies of thinking, to protect students from common fallacies of reasoning, to teach critical thinking, to instill an appreciation of truth, beauty, and morality are neglected. This limitation is, of course, the result of the particular point of view chosen. But it must be remembered that this point of view is one among many. To forget this is to encourage an ideology in which people think of themselves as the theory pictures them, as modules capable of certain functions in a larger system of information processing. (p. 514)

Baron's comments stem from a rejection of the idea that there exists a complete information-processing theory of the human learner. In much of the empirical work inspired by the man-qua-information-processor metaphor questions of "hot cognition" such as the nature of the interplay between emotion and rationality are avoided in favor of the presumed primacy and more fundamental nature of "cold cognition." Affect is viewed as post-cognitive and in consequence is downplayed (Zajonc, 1980). The banishment of affect is even more the norm in teaching. Little wonder that affect-laden topics such as "truth, beauty, and morality" are neglected.

Much of higher education stresses the elimination of affect in exchange for cool, analytic detachment whereby insight is not hampered by emotion. The idealized picture of the impartial scholar who engages in logically precise research is the traditional norm to which we wish our students to aspire. Unfortunately, all too many classroom presentations seem to be based on a similar even-handed approach that robs fascinating subject matter of its intellectual richness and converts it to a bland assemblage of lukewarm facts to be digested for yet another examination. Not surprisingly, students confronted with the "average" teacher are often left baffled why anyone would devote his or her life to the study of such limp material.

While it is true that the traditional lecture format is a most inefficient means of transferring information, one must not underestimate the powerful affective impact that a live lecture can deliver. The charismatic teacher can engender an enthusiasm that may not only ignite a fierce desire for more knowledge and deeper understanding but may also spark a career. Lest I be accused of promoting bald "educational seduction," let me hasten to point out emphatically that the paramount danger is not seduction but boredom. For the great majority of students, higher education is already sufficiently impersonal to lead most of them to believe that no one cares enough to bother to intellectually seduce them!

A Profile of the Charismatic Teacher

Those of us fortunate enough to have been the students of charismatic teachers have marvelled at their exceptional ability to rivet our attention not only for a full class period but, more strikingly, over the entire course or school year. The electric quality pervading their classrooms creates a deep impression that is fondly remembered, much admired, and yet poorly replicated in the classrooms of other teachers with equal knowledge and experience.

In order to nurture the development of qualities inherent to truly inspiring teaching, it is necessary first to identify these qualities. Below I present a profile of the quintessential charismatic teacher taken from Milojkovic and Zimbardo (1980). It is based on our own classroom experiences as students of electrifying masters. (There are clear parallels with charismatic political and social leaders.) [Note: Since the attribute of charisma is not gender specific, the words "she" and "her" should be read as "s/he" and "her/his" throughout the following.]

- Total Mastery: The charismatic teacher appears to be the absolute master of her domain of expertise. Every concept presented appears to have been fully thought through.
- Joy in the Quest for Understanding: Her delight with her field is directly apparent and immediately communicated. Self-disclosures reveal the sophisticated processes of thought that have led to her present conceptualization of the domain under discussion.

- Insatiable Curiosity: She is never satisfied with her current level of understanding but continually seeks deeper and fuller explanations. She learns from every teaching encounter since she is open to new ideas regardless of their source.
- Sincerity: She has a genuine belief in the importance of her field and has committed herself to furthering it.
- Flawless Presentation: Her apparently effortless delivery is smooth and precise. Technical details have been attended to so that all flows like clockwork.
- Overt Assertiveness: She proclaims her interpretations and analyses with the vigor of one convinced of internal consistency and global completeness. Everything about her manner smacks of assertive drive and she projects an infectious air of confidence that permeates the entire classroom.
- High Energy Level: Nothing is approached half-heartedly. Every action is powered with a dynamic force.
- Dramatic Appreciation: She has a profound sense of the dramatic combined with an acute appreciation of timing.
- Clear Affect: She does not hesitate to express her emotional reaction to any facet of her endeavor. Her facial expression, gross body movements and tone of voice all combine to clearly indicate her affective response.
- Positive Self-Image: She regards herself in a positive light and conveys no doubts concerning her self-worth.
- Sense of Perspective: Her power of thought is accentuated by a remarkably clear perception of the context of her discipline and of the importance of outstanding problems in the field.
- Unity of Purpose: She reveals to her students the path they should take toward a commonly shared goal — the enrichment of both intellect and spirit.

Developing a Charismatic Teaching Style

While I agree with the proposition that not every teacher can become charismatic, I do not subscribe to the view that only a gifted few can ever expect to achieve such distinction. Ideas for highly effective teaching rarely happen as if by divine revelation. More often

than not, they are the end product of arduous and well-organized cognitive activity impelled by a burning desire to do a superb job. For each of the abstract principles of charismatic teaching outlined above, a set of operational tactics and strategies can be realized. Such a program for charismatic teaching is currently being developed by a teaching-research team at Stanford University. One of the underlying premises of this program is that the "macro" skill of highly effective teaching can be achieved through the mastery and combination of a number of "micro" communication and social skills. For example, participants are urged to enroll in courses on public speaking, assertiveness, and sometimes even drama. This list might strike some as being more in tune with training for the stage rather than for teaching at the college level. It is important to realize, however, that dynamic teaching is a social interaction with the teacher playing the role of leader. Consequently, if we are to produce highly effective teachers it is imperative that they are not only masters of their subject areas but that they also have a keen understanding of group dynamics, develop excellent social skills, and learn how to display a range of leadership styles.

Through the courtesy of the Center for Teaching and Learning at Stanford progress in achieving teaching excellence is monitored by videotaping actual classroom presentations several times during the course of the quarter. Participants view their own and others' tapes in a warm supportive atmosphere where both successes and failures are closely studied and discussed at length. Our emphasis throughout is not to settle for merely good teaching but to constantly strive for superb teaching that excites and inspires.

Towards Charismatic Teaching

In giving workshops on developing teaching style, I stress that highly effective teaching can be defined by a set of learnable attitudes, behaviors and skills, and not exclusively by innate traits possessed by an individual. During the course of these workshops, participants engage in a number of exercises designed to enhance classroom communication skills. For example, one exercise involves workshop members preparing a 5-10 minute talk on a topic they consider to be

one of the most interesting in their discipline. They then deliver this mini-lecture playing the role of the most boring instructor they have ever had. After a group discussion of the finer features of the much-practiced art of being boring, participants are urged to think about the overt behaviors of charismatic teachers. They regive their talk displaying these behaviors to the group and to a videotape camera. These tapes form the basis for further group discussion about the distinctions between the assertive versus the aggressive teacher, the dynamic versus the overbearing teacher, and the effective educator versus the merely flamboyant showperson.

Other exercises include having workshop members practice various mnemonic techniques for greater classroom impact. These memory aids are invaluable for transforming impersonal lectures into dramatic, compelling intellectual events. Student names and faces are readily mastered so that they can be directly addressed during the course of a lecture which can now be delivered without a dependence on notes.

It should be clear that these and other exercises practiced in the workshops are short-term experiences that serve to highlight only some of the features of outstanding teaching. In addition, one must adopt a long-term approach to effective teaching during which various techniques are sought, tried and discarded as appropriate. As a first step, one might visit the classes of instructors who are well-known for their teaching and pay particular attention to their methodology. Next, one could work on structuring one very special lecture incorporating unusually potent examples, analogies and, if appropriate, audio-visual materials. Developing this lecture clearly involves extra time and thought devoted to meticulous preparation and rehearsal. Although such an effort is not without its costs, experimentation with one's teaching wards off burn-out for both the instructor and the students. After delivering the lecture, actively solicit student feedback, act on that feedback, and give the lecture again as soon as possible. Once that lecture is fine-tuned, aim for a second, then a third, and so on.

The Challenge of Charismatic Teaching

Instructional psychology is making impressive gains with its cognitive orientation. However, as Wittrock (1974) has pointed out, the production of fundamental advances in the understanding of human learning and its facilitation needs to stem from the study of cognitive *and* affective processes. The challenge of analyzing and developing charismatic teaching may lead to greater understanding of both these processes in the college classroom.

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The "First Day" Workshop

Peter Frederick

Time:

A one-day workshop, best done within a week of the actual first day of classes of a new term.

Size:

Any number, but perhaps preferably 20-30.

Goals:

(1) to exchange our experiences and ideas on introducing ourselves and our courses to new groups of students

(2) to plan, try out, and get constructive feedback on a 5-8 minute slice of teaching from the first class meeting of a course starting (next week)

(3) to experience the value of working together as colleagues to meet the common challenges of classroom teaching

Assumptions:

1 - that first impressions are important in setting the tone for our courses, that when students enter our classrooms on the first day, they want to know*

- Does the teacher care?
- Is the teacher fair?
- Is the teacher competent?
- Is this course for me? Will it be useful? valuable? relevant? appropriate?

- Who are these other students in the class?

2 - that there are many different effective ways of addressing these concerns on the first day

3 - that we can learn from each other and that we learn best from doing something immediately applicable in our teaching.

4 - that prior to the workshop all participants will know that they are expected to teach a 5-8 minute segment from the first day of an upcoming course to colleagues. They should have the following instructions: Feel free to select your segment from either a portion of the first day class which you feel most comfortable with, or by experimenting with something new. Some will describe the goals and mechanics of the course; others will begin the substantive content and themes of the course; still others will introduce themselves and the students to each other. Some will lecture; others will engage student participation immediately. Remember: there are many different effective ways to begin.

Your colleagues will listen, learn, and offer constructive feedback. Bring any necessary handout, if you wish to use one for your teaching.

Schedule: ***(and variations)***

9:00 - Brief introductions and break into small groups (3-4) to share ideas and experiences about the first day, and to brainstorm ways of addressing the several student concerns

10:00 - Coffee and informal sharing among groups (or more formal debriefing)

10:30 - Instructions in Giving Constructive Feedback (See Handout), and (with a volunteer teacher and 5-6 "students") model the process of presenting a slice of a first day class, with feedback and discussion.

11:15 - Either free time to prepare (or change) one's presentation, or go right into the Presentation Groups (6-8 in each, including one trusted leader skilled in facilitating a microteaching group).

12:00 - Lunch together

1 - 4:00 + - Presentations (long enough for each person to have an opportunity to teach and receive feedback). Each presentation, including establishing the setting, the actual 5-8 minutes, feedback, and general discussion of the content and pedagogical issues raised, takes a minimum of *30* minutes.

4 - 4:30 - Conclude by bringing all the groups back together for a brief sharing of experiences and insights. (Possibly end the day with a reception and/or dinner.)

Evaluation:

Best done a week later, *after* the first class has met (see attached example)

Workshop Variations and Adaptations:

- Add a half or full day workshop *before* this one, and do course goals and design, and/or student learning styles.
- Focusing on course goals and the same set of student concerns and expectations, or on "problems in mid-term," repeat the workshop in mid-semester.
- The last day?

* See Stanford Erickson, *Motivation for Learning* (Ann Arbor, Mich., 1974), pp. 241-42.

Guidelines for Giving Constructive Feedback in Microteaching Sessions

Two basic premises:

*There are many different ways of being an effective teacher.

*We can expand our effectiveness by observing other teaching styles and by getting immediate feedback on our own style.

1. Before teaching, the person to whom feedback is to be given has an opportunity to state those specific things he/she wants feedback on; after teaching, that person goes first in commenting on how he/she felt about it.
2. Feedback from others is most helpful when it is *descriptive* and *specific*, expressing the student's experience (in "I" statements) in reaction to the teacher's behavior. Let the teacher, then, decide what to do with the information received.

Examples of helpful comments:

"I felt very nervous when you explained that the paper was worth 50% of our grade."

"I felt relieved when you said you wanted to have a conference with each student about the paper."

"I understood the principle when you repeated it that third time."

"I saw the point clearly when you put the diagram on the board."

"I was lost and stopped listening when you read that long quote from whats-his-name."

"I needed a visual reinforcement of that point you made about X."

General and evaluative comments do not help: "that was really good."

3. Helpful feedback *focuses on behavior* rather than on the person, and on behavior which the receiver can do something about. "Your voice is too nasal," or "you're a sophisticated intellectual

who likes big words," or "you are a dominating personality" are not helpful.

4. Feedback should be *checked with others* to determine the extent of agreement about a particular experience or observation. Is this one person's impression or is it shared by others?

DO NOT role play being a student; just be yourself.
DO NOT make evaluative, judgmental comments.
DO NOT offer advice and solutions unless specifically invited to do so.
DO NOT start sentences with "you..."
DO NOT overload with more feedback than can be reasonably absorbed at one time.
DO NOT state too many DO NOTS.
REMEMBER: Pointing out strengths is often more constructive than describing weaknesses.

Evaluation of Workshop on "The First Day"

1. What specific activities/interactions/ideas of the workshop were MOST USEFUL to you? And why?

2. What specific activities/interactions/ ideas of the workshop were LEAST USEFUL to you? And why?

3. Did the workshop have any impact—direct or indirect—on what you actually did on the first day(s) of class(es)? (goals, format, style, content, etc.)
   Yes, directly _____ Yes, indirectly _____ No impact _____
   If yes, please give specific description or examples (briefly):
4. Please make any additional comments you wish to about the workshop on "the first day" and about future activities of the

Teaching and Learning Committee. What should we be doing next that would be helpful?

A Second Look At Faculty Development and the Second Sex

Michele Fisher and Winifred E. Anderson

Description: The workshop begins by identifying the needs and interests of women in academia as perceived by the workshop participants. Workshop facilitators provide information from the literature and their personal experiences on major issues and descriptions of the successes and pitfalls of various support programs. Participants then work on solutions to common problems and issues described in a set of case studies. The ensuing discussion concludes with the generation of two lists, one identifying needs and problems of academic women, and the other containing suggestions for remedies and actions, particularly at an institution-wide level. The final activity is distribution of literature and collection of names and addresses to facilitate further communication among participants.

Length: 1 1/2 (or 2) hours

Participants: Faculty development personnel, academic administrators, department chairpersons, faculty members, and/or graduate students

Objectives:
1. Raise consciousness regarding the special problems and needs of women in academia
2. Identify or generate solutions to those problems and needs
3. Build the energy, confidence, and enthusiasm required to put such solutions into practice.

4. Share information regarding successes and failures of past efforts
5. Initiate a new support network and establish a mechanism for future information exchanges

Materials: Case studies (seven examples are included in this outline) Select bibliography of books/articles example included) Handouts providing information on existing groups, activities, etc. Two large newsprint pads and stands or chalkboard. Registration list including addresses and/or telephone numbers.

Schedule and Content

I. *Opening and Background Information*
20 (30) minutes

A. Facilitator presentation:
Introduction of workshop, facilitator(s), and session objectives
Brief description of workshop format

B. Facilitator elicits information from participants:
"How would you describe the environment for women in the academic institution/group you represent?"
"What do you perceive as major concerns or interests in this area?"

C. Facilitator presentations:
1. Reasons for interest in topic of support for academic women
a. Data on hiring, promotion, etc.
b. Women as source of new energy and creativity
2. Description of the development of a campus support system; identification of efforts that were notable successes or failures

II. *Case Studies*
30 (50) minutes

A. Facilitator: 5 minutes
1. Divides participants into groups of 2 or more. Members of each group are given copies of a case study.

2. Instructs each group to read the case study and develop proposals for dealing with the specific case and, if possible, for actions that would respond to the situation on an institution-wide basis. [Each group is given a different case study. There should be 3-5 groups, depending upon the amount of time allotted for discussion of the case studies.]

B. Small group work 10 minutes

C. Reports to the plenary session 15 (35) minutes

All participants are reassembled. From each group, one person reads the case study aloud. A second spokesperson presents the group's proposals. Discussion and comment from all participants are encouraged as time allows.

III. *Summary*

30 minutes

A. Facilitator generates two lists from participant contributions:

1. "In summary, what have we identified as major issues or concerns for women in academic environments?"
2. "Let's see if we can now generate a check list of specific programs and actions that we would recommend to persons or institutions interested in addressing those issues."

IV. *Conclusion*

10 minutes

A. Facilitator:

1. Describes available literature and invites participants to browse and take away what they wish
2. Indicates plan to collect and distribute names and addresses/telephone numbers to facilitate further contacts among participants
3. Makes final remarks

Case Studies:

Number 1

You are consulting with a teaching assistant who has consistently received low student evaluations. She has been warned that unless they improve she will not be asked to teach again, and it is her main source of income. She is convinced that her low evaluations are related to the fact that she is the only woman teaching in the department, her students are almost all male, and she lacks the "hands-on" knowledge many of her peers and professors have. Your own observations, based on personal visits and videotapes, reveal that her interpretation seems at least partly justified. Aside from a certain lack of self-confidence and a rather low-key style, she exhibits good teaching skills.

What strategies do you try in your consultation? How do you address her frustration that is mainly her gender that is affecting an otherwise potentially successful career?

Number 2

Over the past few years, a group of undergraduate, graduate, and young faculty women on your campus have been drawing attention to circumstances they perceive as sexist. Examples have ranged from the lack of child care facilities, to the dismissal of a popular feminist instructor, to the dearth of female administrators. The college president has finally appointed a Task Force on Women to research the relevant issues and you have been asked to be on it. After the first few meetings you get the strong feeling that the Task Force was created primarily for the sake of appearances and that most of the (male) administrators have little or no empathy for women's issues.

What strategies and activities would you recommend to your fellow Task Force members? What do you perceive as potential pitfalls and how would you avoid them?

Number 3

During a private, social conversation you learn from a female faculty member that she is feeling extremely frustrated and unhappy

over the slowness of her promotion progress. It seems that she and her husband joined the faculty at the same time and have similarly outstanding research and teaching records, but he has been receiving accelerated promotions and her progress has been minimal. She is the only woman in her department. Recently he has heard the comment that some of the senior faculty members see no urgency in promoting her since there is already a full professorship in the family. (i.e. her husband's) and there is little likelihood that she will be inclined to go elsewhere.

Is there anything you as a colleague can or should do to help her? What actions might be useful on a long-term, campuswide basis to reduce sexual bias in promotion/tenure decisions?

Number 4

A minority graduate student has come to consult with you about the results of a student survey you conducted in her class. It soon becomes apparent that what she really wants to talk about is her total (mostly unpleasant) experience as a graduate in your university. She says she is on her third major advisor, is having difficulty developing a productive research project of which the advisor approves, and has been told by two faculty members that since she seems unable to find a compatible advisor and a good research project she is wasting her time in graduate school. She is obviously not comfortable with her third advisor either, but is afraid that changing again will damage her reputation beyond repair. She seems very determined to complete a graduate degree. She is aware that her personal style is not particularly smooth and self-confident and mentions that she has taken an assertiveness class to help remedy the situation.

How would you counsel her? How can it be determined whether this is an instance of faculty resistance to a non-traditional student or a case of a student making a poor career choice? Is this determination appropriate for you to make as a faculty development consultant or should you refer her to someone else? If so, to whom?

Number 5

During an informal meeting of faculty women you are surprised to hear several women from predominantly male departments complain that by far the greatest amount of sexual bias they encounter comes from women on the departmental secretarial staff. For example, typists who are often "too busy" to type letters and exams for women faculty, have never yet been known to turn down a typing request from a male faculty member. Differences are also apparent in the level of professionalism used in conversation and in taking telephone messages. Female faculty (especially young ones) are referred to by their first names; males are called "Professor Smith" etc. One female faculty member found that when she was out of her office, callers were told in an off-hand tone that "She isn't there and I have no idea where she is or when she will be back." She inquired among her male colleagues and found that the treatment their callers received was remarkably different—the professor's schedule was explained and messages were taken in a very professional manner.

How would you suggest resolving such problems? What pitfalls do you see and how would you avoid them? What long-term, campuswide actions might be helpful?

Number 6

You have been asked to organize a workshop for faculty members who are about to teach an innovative humanities sequence. For the most part you will be attempting to combine an intensive review of selected content with recommendations on effective teaching techniques. The Women's Research group on campus has heard about the workshop and asked that a session on "gender assumptions" be included, discussing, for example, how standard works should/could be reinterpreted once gender assumptions are re-examined. It is the group's contention that since this is a new and innovative sequence, it has a special obligation to consider the research and the theoretical challenges that Women's Studies has developed in relevant fields. The research group is willing to assist you in the choice of speakers and format for the session.

Do you go along with the group's recommendations? If so, what steps do you take to maximize the positive impact that this session will have? What problems do you anticipate and what can you do to minimize them? If you do not agree to their recommendations, what do you propose instead?

Number 7

Because you work with graduate teaching assistants, you are asked to a meeting on improving the quality of graduate student life. One of the graduate students suggests that he and his peers need more social supports. A woman graduate student agrees and says that the problem is particularly acute for women who are in departments that are mainly male. One of several department chairs there immediately retorts that even if social isolation exists, it is not an important issue; the "cream always rises to the top," that is, the best always survive. He further insinuates that affirmative action programs at both the faculty and graduate level have brought in the unfit and intellectually inferior. The remarks are challenged by several participants, but the line of discussion is cut off by the committee chair as he sees emotions rising.

Later you are asked how, if at all, the department chair should be approached regarding his affirmative action attitude and its consequences for women (and minority) faculty and students in his department. What would you advise? Are there worthwhile actions that could be taken at a campuswide level that would help change such negative attitudes?

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Overview of Trigger Film Strategies

Linc. Fisch

Jack: [Offering wine bottle.] Want some?
Tim: No.
Jack: Scared? [Bottle still held out.]
Tim: I ain't scared...
Jack: Catch it or it'll break!
[He drops it. Tim's hands catch it, hold it tight.]
Now you drink!
[Freeze on Tim's hands holding bottle. Cut.]

The above excerpt is from the script of "The Buddies," a trigger film about two 10-year-old boys. It's one in a series of six alcohol education films developed for the National Institute on Alcohol Abuse and Alcoholism. They don't lecture or moralize. They are designed to help young people decide for themselves about the use of alcohol.

The excerpt actually represents nearly half of the film. Short? Extremely so—trigger films often are only a minute long. Dramatic? Quite—every shot in "The Buddies" is a close-up. Incomplete? Intentionally—the essence of a trigger film is its open-endedness. All of these are calculated to enhance the purpose of a trigger film: to trigger feelings and reactions of the viewers.

A trigger film can do more than produce rapid entry into a discussion. When group members work first with a relatively unthreatening situation simulated in a film, they often become more free to discuss parallel situations in their own lives. Since participants begin to use each other as resources, the technique facilitates movement of

the teacher out of an authority role, which enhances learning in many circumstances.

This unique kind of film-for-discussion evolved in 1968 at The University of Michigan Television Center with a series of films produced for training young drivers. The innovation caught on rapidly, and trigger film series have been produced for use in such diverse fields as aging, drugs, mental retardation, nutrition, smoking and health, patient education, learning-teaching and library media utilization. One indication of how extensively the trigger film idea has spread: As of this writing, there are 25 trigger films relevant to the field of alcohol education alone.

The small-group discussion is the basic trigger film strategy. Trigger films have been used widely in classroom discussions at all educational levels and in seminars at meetings and conferences, including the 1971 White House Conferences on Aging. The technique also has been incorporated into several other instructional strategies.

Variations in Use

Because a trigger film is so compact, the production of a trigger film can readily become the focal activity in a groups' learning experience. This strategy was employed beautifully in a high school sex education seminar: Students developed ideas, prepared a script, acted out roles, filmed and edited—all the while going through a very meaningful exploration of the dimensions of human sexuality. A similar approach, using videotape instead of film, is being used successfully for in-service training of teaching fellows and peer counselors at the University of Michigan.

A variation of the production strategy has been adapted for workshops at several regional and national public health conferences. The medium of videotape permits compressing the production time and allows for instant replay. Production can be accomplished with a portable, one-camera video system that can be carried easily by one person. In one notable instance of the learning effectiveness of this strategy, 40 public health workers in Texas produced five trigger tapes on smoking and health in a little over two hours.

The results were quite acceptable for showing at a booth during the remainder of the conference, but the primary achievement was that the workshop members examined the parameters of smoking and health, developed increased awareness of exemplary health behavior, and in many cases came to firmer commitments themselves with regard to such behavior.

Although trigger films are clearly intended for use in group learning experiences, there is at least one instance of a trigger film being used in a one-on-one situation. A film focusing on the nature and cause of alcohol abuse was developed for training case workers in a county health department. Several of the case workers began to use the film in individual consultation because it allowed moving easily from exploration of the film situation to examination of the client's own problem.

A program developed by the U.S. Army at Fort Knox is another practical example of a trigger film strategy at work. Video trigger tapes of problem racial situations are shown; the tapes end at the height of the critical moments for decision making or action. Viewers then play out the roles from that point and in the process explore and begin to resolve some of their own tensions with regard to interracial relations.

Since a trigger film never stands alone—discussion is a must—public television applications ordinarily are not appropriate. However, one producer is incorporating trigger film will be shown to a group of teenagers and to a group of adults. By frequent cutting from one discussion to the other, comparisons of attitudes in the two age groups will be portrayed. In a sense, viewers of the program will be participating in both discussions vicariously.

Perhaps one of the more unusual variations of trigger film strategy is occurring at the UK College of Dentistry. In a curriculum that extensively employs self-instructional modules, Oral Biology faculty members have observed that a relatively unvaried instructional diet sometimes contributes to student lethargy. Trigger videotapes related to the modules are being programmed intermittently to rekindle motivation and interest and to stimulate discussion and interaction among students.

The preceding instructional strategies share one thing in common: the use of a film or video tape to trigger viewer interaction. The

interaction is the essential ingredient for learning; the film or tape is a highly effective way of bringing it about.

Strategies for using trigger films are appropriate only if interaction among persons is an indicated method for achieving instructional goals. Some general examples of goals in this category are affecting attitudes, clarifying values, modifying perceptions and generating commitments.

In a university setting, trigger film strategies might be applicable in areas where the primary focus is on issues—for example, behavioral sciences, social professions, law, teacher education. They may also be applicable in training for more effective interpersonal skills—interviewing, counseling, academic advising, patient relations, to mention a few areas. They may be employed for training in problem solving and decision making in management courses. And in almost any area they can be used to energize students.

While trigger film strategies have wide applicability, they should be used judiciously in a mix with other instructional strategies. As important as when and why to use a trigger film is the matter of how to use it wisely. Proper discussion management is an important consideration. A very good trigger film can be made completely ineffectual by imposing constraints, control or evaluation on the interaction that develops from the film.

Production

When examining trigger films and trigger tapes, certain characteristics are frequently found: limited data presented, open-endedness, relative incompleteness, and an emotional aspect. These features are deliberately built into the films in order to generate rapid viewer involvement. The viewer quickly begins to work with the feelings and tensions that are being experienced, to hypothesize about missing data, and to look for interrelations among aspects of the situation in an attempt to construct a more understandable whole.

In the design of a trigger film, the primary consideration is identification of educational goals, as it is in any instructional problem. The next consideration is development of a situation that will generate attention to the area of the objective. The point at which to enter the

situation and the extent to which data can be omitted are very significant, since brevity seems to heighten the impact of a trigger film. Often, reduction of dialogue enhances effectiveness.

Of all the decisions that are necessary in a trigger film production, the most critical is determination of where to terminate the film for optimal triggering of viewer interaction. Trigger film producers often ask themselves, "What immediate response do I want from the group when the projector is stopped?" Generally, closure is to be avoided. Alternatives and dilemmas may be posed, but the action should stop short of decision. The idea is not to present solutions, but to create a context in which people explore ideas, examine alternatives and reach their own decisions.

People frequently become interested in developing their own trigger films, but are concerned about the cost. A professionally produced 16mm trigger film of a minute or two in length can cost $2000 or more. Obviously, costs such as this would be justified only if extensive use or wide distribution were distinct possibilities. The cost might be cut to less than half by using color videotape instead of film. (At a moderate additional expense, a video trigger tape could be transferred to film, if the latter were the required display format.)

For the average academic department which finds several hundred dollars a prohibitive expenditure, there are other alternatives. For many in-house uses, very satisfactory trigger films can be produced with 8mm film or videotape using portable equipment; film and tape costs are low, and not a great deal of time or experience is required. And the really creative person (who, after, all, is a more essential production ingredient than money) may be able to accomplish almost the same results with 35mm slides and synchronized audio tape for , perhaps, as little as $5 out-of-pocket.

To be sure, saving on cost always involves trade-offs. IN a $2000 film production there can be flashy titles, jazzy effects, beautiful sound, a luxurious ratio of film shot to film used, and dramatically tight edits. Some of these may have to be sacrificed when using videotape, but less time in production is a compensation. Even though most of them are apt to be missing from the $5 version, a properly conceived economy model may do the job quite well for the individual teacher in the individual classroom. The prime criterion for the evalu-

ation of a trigger film is not whether it wins film festival awards but whether it triggers response. If it does, it will be successful.

The choice of an instructional strategy is also a pragmatic one: will it accomplish the desired results? Trigger film strategies are often useful when the goals are behavioral and attitudinal changes brought about by group interaction. If this is what you are trying to achieve, then trigger films may be an innovation you want to consider.

Further information on trigger films and their use can be found in these articles.

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The Classroom Information Manual: A Guide to the Teaching Environment

Marina Estabrook

Most courses offered by colleges and universities are housed in what are called general assignment classrooms. Although much similarity exists among classrooms they are not all alike nor do they serve all instructional purposes equally well. Therefore to provide instructors with information about campus classrooms can greatly assist them with their teaching.

The development of the *Classroom Information Manual* was inspired by a faculty evaluation study of classrooms conducted on our campus (Estabrook, 1981). We learned from the study that an important source of faculty dissatisfaction with classrooms is a poor match between instructor and classroom. For example, some mathematics and engineering professors in need of large blackboard space taught in classrooms with small blackboards; geography and history instructors who use maps for demonstration purposes taught in classrooms with no wall map hooks; instructors who wanted to stimulate discussion among students taught in classroom with fixed as opposed to movable furniture; instructors using slide demonstrations taught in classrooms ill-suited for slide projection.

We also learned from our study that a lack of familiarity with the classroom prior to the commencement of instruction can cause the instructor unnecessary frustration and confusion. For instance, in some lecture halls on our campus the electric outlets for projection are hidden under student seats; some classrooms require extension cords

or special lenses for projection purposes; some light and sound control panels have a baffling array of switches and plugs.

Finally, our study informed us that faculty and department staff lack information about whom to contact in case problems or questions arise with respect to classrooms. Faculty endured such inconveniences as lack of chalk and erasers, no lecterns, no projector stands, no instructor's desk or chair, flickering lights, broken rheostats, faulty PA systems, broken screen strings, unreachable venetian blind ropes, etc.

The classroom study thus helped us to formulate the objectives of the Manual and to identify what information about classrooms would be useful to instructors.

The Classroom Information Manual

The Manual contains a description of each general assignment classroom. The sample classroom description below identifies the salient classroom features.

Description:

Maximum seating capacity: 306

Shape: nearly square (55' x 45')

Windows: along one side are windows that open

Covering: drapes

Doors: one in front and one in rear

Special feature: clock

Blackboard space: one wall (24'); blackboard lights

Student seating: 300 fixed desks; writing arm is small in size; seats are numbered; floor is tiered and partially carpeted

Instructor's area: fixed lab table; lectern

A/V capabilities: projection booth and cabinet; built-in remote control and built-in PA system; electrically controlled screen in front; electric outlets in front, back and in projection booth; darkening capabilities are good; light control in front; partial lighting capabilities.

Comment: the PA and projector systems cannot operate simultaneously.

In addition to the descriptions, we listed classrooms according to classroom features. Thus users of the Manual can quickly determine which rooms have TV monitors, rheostats, windows that open, fixed seating, etc. Furthermore, we listed whom to call on campus concerning classroom matters.

The Manual was distributed to all departments on campus with a cover letter outlining its objectives: (1) to assist departments with special teaching needs in requesting room assignments; (2) to familiarize faculty members with the classrooms in which they are scheduled to teach; (3) to inform departments who on campus offers assistance on classroom matters.

Follow-up

A year after the Manual was distributed we asked the principal users in each department to evaluate the content of the Manual and its usefulness. We sent 46 questionnaires and received 26 replies (56%).

We learned that the principal users of the Manual were department administrative assistants whose responsibilities include arranging room assignments for department courses and scheduling rooms for colloquia, seminars, and conferences. Faculty use of the Manual varied among departments. In one-third of the departments 20%-25% of the faculty had used the Manual. I the remaining two-thirds of the departments, less than 10% of the faculty had used it.

The evaluation of the Manual by its principal users has been very favorable. For the purpose of requesting room assignments for department courses, 68% of the respondents found it very useful; 27% somewhat useful; 4%, not useful at all. For scheduling conferences, colloquia, or seminars, 80% found it very useful; 10%, somewhat useful; 10% not useful at all.

Faculty members have also reacted favorably to the Manual. The Manual not only helped faculty members locate classrooms more suitable for their teaching purposes than the one in which they usually taught, but it also increased faculty awareness of the teaching environment. One instructor who paces and likes to maintain eye contact with

students found that he is far more comfortable teaching in a wide and shallow room than in a long and narrow one. Another instructor has developed a new approach toward slide presentation after learning that there are classrooms with double screens.

Overall, our experience with the Manual has convinced us that such a document is a useful instructional resource.

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Instructional Improvement Through Individual Consultation

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Recently increased concern regarding the quality of higher education has led to a variety of efforts to improve instruction (Nelson and Siegel, 1980; Gaff, 1975). Sharing this concern, various departments at the University of Minnesota have participated in an approach to instructional improvement based on ongoing consultation between individual instructors and an educational psychologist. Individual consultation has been used successfully as a means of improving instruction in a variety of educational settings (hospital rounds, preceptor case reviews, classroom labs, discussion, and lectures) with varying numbers of enrolled students (1-150). This paper summarizes the theoretical bases of individual consultation, describes this approach to instructional improvement, and provides an example to illustrate to approach used.

Theoretical Bases

Theory 1: Instructional Interaction

David Hunt (1974, 1978) argues that the outcomes of the teaching-learning process are a function of the learning environment created. This environment is continually modified by the interactions which occur between students, subject matter, instructional techniques

(Jenkins, 1977) and the teacher. Understanding the learning environment requires understanding the interactions between a particular instructor, his material, his method of presentation, his instructional objectives, and his students.

Theory 2: Student Differences

The way in which a particular instructor thinks about his students affects how he will teach. Observing how one teaches a graduate course in clinical pharmacokinetics versus an undergraduate course in microbiology should reveal this distinction. However it frequently does not because instructors typically have very limited ways in which to think about students and teaching. For example, one faculty member asserted, "there are three kinds of students: those who will learn in spite of what I do, those who will learn because of what I do, and those who will fail to learn no matter what I do." Such limited constructs place constraints on the instructor's ability to increase the number of students who will learn "because of what (he) does."

Alternative ways of understanding students can lead to more effective instruction and learning. William Perry (1970) provides a useful framework for thinking about differences in students. Instructors want students to be able to analyze, synthesize, and evaluate information. Or as the most frequently summarized, "I want my students to think . . ." Recent research (cf. Lawson, 1978), based on Perry's scheme of intellectual development indicates that the majority of college seniors are not able to think in the ways desired by faculty. This approach to describing differences in how students think about information can be used by the professor to design a learning environment which encourages the development of more appropriate thinking skills.

Theory 3: Change

So far, it has been assumed that the way the instructor talks about differences among his students will have a direct relationship to what he actually does in the classroom. However, Argyris and Schon (1977) found that people do not always do what they think they are doing, and more importantly, that few instructors are aware of any differences

between what they think they are doing and what they are doing. For example, a professor needs to become aware of such incongruities as saying he wants students "to think in class" and simply lecturing from the book and testing for recall of facts.

The Approach

These three theories and their supporting research have led to an instructional improvement approach which involves individualized consultation with instructors to: (1) discuss the congruence of what they say with what they do; (2) provide alternative ways to think about students which can lead to instructional improvement; (3) discuss instructional techniques which may be appropriate in their setting based on the instructor's own style, his objectives, his content and the students in his course; and (4) create an environment in which the instructor is able to "think" about his instruction, practice new alternatives, and evaluate his own performance.

Instruction is viewed as an interactive process between teacher, students, outcome, teaching approach, and content. The goal of instructional consultation is to help faculty attain a more accurate conceptualization of factors affecting instruction. There are four major steps in the consultation process: (1) developing an understanding of the factors which the instructor views as critical to successful teaching; (2) comparing what the instructor says he wants to do with what he does, by means of observation, student interviews, and consultation; (3) exploring and using alternative teaching strategies based on the instructor's new conceptualization; (4) evaluating the "success" of new concepts and strategies in helping to create an instructional environment consistent with desired educational outcomes.

During all four steps the equality of status of the faculty member and consultant is maintained. By equality of status we mean that the content expertise of the instructor is united with the instructional expertise of the educational consultant for the agreed purpose of instructional improvement. The case of Professor Latham and his large lecture class in the College of Pharmacy illustrates the process of instructional consultation.

An Example

Step 1: Identify the Instructor's Major Concerns

During conversation with Latham the consultant learned that Latham equated successful instruction with the ability of students to perform successfully in his course. According to Latham, the degree of success was primarily due to the student's possession and utilization of an "innate ability." Thus he explained differences in student performances in the following way: Students in the lower one-third of the class did not have "it" so they could not use "it." Students in the upper one-third had "it" and used "it." Students in the middle one-third had "it" but did not always use "it." Therefore his responsibility as an instructor was to motivate those who had "it" to use "it."

To rephrase Latham's conceptualization of successful teaching, if a student performs well it is because she has the ability to think and uses that ability either by her own inclination or as a result of the instructor providing the right motivation.

Step 2: Challenge Instructor's Concepts of Teaching

The idea of students possessing an "innate ability" to think is undeniably true at some level. However, the College of Pharmacy at the University of Minnesota has a selective admission program; there is a very low probability that students do not have the innate ability to succeed.

An alternative factor seems more plausible and more powerful in terms of improving student performance: differences in the students' learned ability to analyze, synthesize, and evaluate information.

Following a discussion of this hypothesis with Latham, the consultant gathered data through classroom observation and student interviews to test this alternative way of construing performance differences. Two major pieces of information were used to challenge Latham's conceptualization of instruction. First, his examinations required students to analyze various features of a microbiological problem, to explain why certain results could occur based on their knowledge of biological principles, and to evaluate particular actions. Successful performance on these examinations requires both knowl-

edge of content and knowledge of how to use that content to evaluate pharmaceutical procedure.

The second challenge of Latham's conceptualization came from student interviews and directly addressed the question of motivation. The consultant interviewed fifteen randomly selected students who performed in the middle one-third of the class; Lata judged those students had "it" but did not use "it", thus they were defined as unmotivated. One "unmotivated" student attended every lecture, took notes during the lectures while concurrently taping lectures, each night reviewed the tape to fill in anything which she may have missed in her notes, read the text, then reread the took notes on the text and finally reviewed all notes several times before each exam.

All of the interviewed students indicated they had trouble with the problem section of the test. Comments such as these were typical: "don't know how to study for essays...Guess you just have to know everything," "after he went over answer in class it made sense...I knew it...but didn't know that it was what he wanted."

Step 3: Formulate Alternative Teaching Approaches

Toward the end of the course Latham began to reconceptualize his teaching. One opportunity to "train" students "how" to think occurred during the first half of a sixty-minute review session for the final examination. The consultant and Latham analyzed the mistakes students had made in responding to the problem questions (e.g., acting on only one of the several interacting features of the problem) and the steps used by Latham in solving the problem. The consultant assisted Latham in his understanding of the differences between successful and unsuccessful methods of approaching and solving problems. Using this understanding, they developed a teachable strategy which students could use in solving problems. The strategy was presented during the review session.

Step 4: Evaluate New Approach

Convergent data were used to evaluate Latham's reconceptualization of instruction. Three sources of data were available to assess the impact of the review session: (1) a statistical comparison of exam

scores for those who attended the review session versus those who did not; (2) interviews of students who attended; (3) Latham's assessment of any changes in the way in which students solved problems. While each of these sources can be challenged, the findings from all three sources were consistent and supportive.

Comparison of examination scores. Fifty-four of 107 students voluntarily attended the review session. On the final examination separate totals for the problem and multiple choice sections were obtained. A comparison of treatment and control scores on the multiple choice section indicated no significant differences between the two groups.

Midquarter exam scores had been obtained five weeks before the final review session. Students who attended the final exam review session had scored an average of two points lower than those who did not attend. Therefore, an analysis of covariance was used to compare the performance of the two groups on the problem section of the final. Scores on the midterm were used to statistically control for differences in initial performance of the two groups. The analysis indicated that on the problem section of the final, the section which was the focus of the "treatment" effort, those who attended the review session scored significantly higher than those who did not ($F1,101=9.64$, p, 0.002).

Latham's comparisons of student performance on midterms and final. Latham grades all final exams with no knowledge of whether the papers belonged to those who had or had not attended the review session. Following the midterm, Latham's reactions to the students' responses were as follows: students did not answer the question asked; students added information to original; and students' responses were incoherent, disorganized, and somewhat random.

Latham's reactions to the final exam were as follows: "There seemed to be less groping...the answer the student settled on, whether right or wrong, was expressed concisely"; "There was evidence that the answers were compared back to the question as if the student was attempting to justify his answer with the information given."

Student interviews. Students were interviewed if they attended the review session and improved their performance from the midterm to the final exam by at least twenty points. Scheduling constraints limited the number of students to be interviewed to six. Two general types of

responses were received from these students when asked how they explained their improved performance.

The first type of response was that the review session was a waste of time. The reason that these students attended was that "you never know if the teacher is only going to answer specific questions that you ask or if he is going to start talking about points to know for the exam." Most of the students interviewed indicated that the essay review section helped their performance on the final exam. One typical student said, "I can remember getting the final and turning to the problems right away and reading them and remembering about the problem that we did during the review session."

When asked to explain how they had approached the exam problem these students described the key features of the approach discussed in the review session: identify important features of the problem, review the knowledge which they possess about these features, compare knowledge to situation presented in the problem, select an immunological concept which would explain the situation, and finally evaluate appropriateness of answer to the original question.

The three sources of data taken together seem to indicate that the focus on teaching thinking skills may be a more viable way for Latham to understand the teaching-learning process than for him to concentrate innate differences and motivation.

Conclusions

This synopsis of the consultation project at the University of Minnesota was intended to provide an example of a unique approach to instructional improvement. This approach seeks to understand how the instructor understands the teaching-learning process (particularly student differences), to challenge the adequacy of this view in light of the instructor's stated intentions, and then to develop, implement, and evaluate new instructional techniques based on the instructor's revised conceptualization of the teaching-learning process. Consultation results in instructional changes which are valued by the faculty member because he is actively involved in analyzing his own teaching and creating approaches which suit his unique teaching environment.

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